











## OVERSEAS NEWS

## Egypt and Libya bid to patch up quarrel

CAIRO, Sept. 21

EGYPT AND Libya are negotiating through diplomatic channels to heal their three-year-old political rift. Libya's top diplomat in Cairo said to-day.

"We are optimistic about an improvement in relations between the two countries in the near future," Mr. Abdel-Kader Ghoka, director of the Libyan Relations Office (embassy) told UPI.

Asked whether the current dialogue would lead to a meeting between Libyan leader Col. Muammar Khaddafi and Egyptian President Anwar Sadat, Mr. Ghoka said: "Such a meeting is not impossible. The two leaders are brothers who head two sister countries. We hope a meeting will materialise."

He spoke immediately after conferring with Egyptian Foreign Minister Ismail Fahmy, the latter's request. He said consultations between him and Egyptian officials have been going on for some time.

Following a bomb explosion aboard a train in Alexandria last month and an official claim that Libya was responsible, President Sadat said the Libyan leader "will not escape from my hands."

But King Khaled of Saudi Arabia, apparently aware of the current bid for an Egyptian-Libyan reconciliation, expressed confidence in an interview to-day that common bonds of religion and language between the two countries will lead to rapprochement.

He cited as a hopeful sign Col. Khedafi's remarks carried recently by a Cairo weekly magazine describing President Sadat as "my father and he has the right to do whatever he likes with me."

The Libyan leader also said then all he wanted in order to mend fences with President Sadat was a meeting with him "for not more than five hours."

But he laid one condition for a reconciliation—the extradition of Major Omar el Mechichi, a dissident member of the ruling Libyan Revolution Council who fell out with Col. Khedafi and has been a political refugee in Egypt since last February. Egyptian officials said extradition was out of the question. UPI

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## Clashes on all Lebanese fronts

BEIRUT, Sept. 21

ALL MAJOR fronts in Lebanon's civil war were reported ablaze early to-day amid growing doubt that the inauguration of a new president on Thursday will bring real change to the battered nation.

According to radio stations supporting both sides in the 17-month-old war, Syrian-backed rightists and forces of the leftist-Palestinian alliance hammered each other with everything in their arsenals.

The reports spoke of ground fighting—in some areas supported by tanks—and artillery exchanges in the mountains.

east and south-east of Beirut, around the vital northern port of Tripoli, and along the confrontation line dividing the capital.

Violent overnight clashes were reported in the area near the Beirut museum, once considered a possible site for president-elect Elias Sarkis to take the oath of office on Thursday.

He succeeds right-wing president Suleiman Franjeh, who has stubbornly refused to step down before the end of his term although Mr. Sarkis was chosen to succeed him more than four months ago. The museum fighting earlier

gave rise to fears that Mr. Sarkis's inauguration might bring a repetition of the scenes which made his election one of the most unusual in recent history.

On that occasion a hail of shells crashed into the area as deputies accompanied by bodyguards arrived at a villa near the museum to cast their votes.

Lebanon's belligerents stepped up fighting following the failure of talks last Sunday between Mr. Sarkis, Palestinian command chief Yasser Arafat and Syrian deputy defence minister Naji Janji at the eastern Lebanese town of Shtoura. Reuter

## Mr. Sarkis to be sworn in at Syrian-held Shtoura

BY HSIAN HIJAZI

BEIRUT, Sept. 21

THE Lebanese Speaker, Mr. Kamel al Assad, has called the country's 88-member unicameral parliament to a meeting in the town of Shtoura in East Lebanon on Thursday for the inauguration of Mr. Elias Sarkis as the new President of the Republic.

Mr. al Assad's decision came after a French jurist, M. George Vadel, advised the authorities here that a study of the Lebanese constitution showed that the House can meet outside Beirut.

The choice of Shtoura was because the Museum area where the temporary headquarters of Parliament is located has been the scene of heavy fighting in the past few days. It was in that area, where the dividing line between Beirut's Moslem and Christian quarters lies, that Mr. Sarkis was elected last May.

Mr. al Assad's decision came after a French jurist, M. George Vadel, advised the authorities here that a study of the Lebanese constitution showed that the House can meet outside Beirut.

Shtoura lies in the Syrian-controlled Bekaa Valley. It is there that the bulk of Syrian troops are stationed. Therefore, the Lebanese legislature on Thursday will be under the protection of Syrian forces.

Foreign diplomats and journalists who arrived here via Damascus during the past 24 hours said the Syrians were preparing for a major offensive in Lebanon.

The news has been substantiated by the presence in Damascus of a high-ranking Soviet official, Mr. Vladimir Vinogradov, whose formal title is co-chairman of the Geneva Conference on the Middle East.

Damascus radio said the talks Mr. Vinogradov has held with Mr. Abdel Halim Khaddam, the Syrian vice-premier and foreign

minister, centred on the reconvening of the Geneva conference. However, reliable East European sources here emphasised that Mr. Vinogradov had been sent by the Soviet leadership to deter Syria from undertaking a military initiative in Lebanon.

His mission, they added, is to back up a message which Mr. Leonid Brezhnev, the Soviet Communist party leader, sent to President Hafex al Assad five days ago urging him to withdraw his forces from Lebanon.

According to the East European sources, Moscow had received information to the effect that Syria deliberately adopted an inflexible stand at the tripartite conference on Sunday at Shtoura to set the stage for carrying out a military operation which will tame the Palestinian guerrilla movement and its Lebanese Left-wing allies.

The meeting, in which Mr. Sarkis, guerrilla leader Yasser Arafat and Syrian Deputy Defence Minister Air Vice-Marshal Naji Janji participated, broke down.

Moscow's information, the sources said, is that the Syrian offensive will take place two weeks after Mr. Sarkis takes office as president. The 14-day grace period is intended to have Mr. Sarkis go through the motions of holding a dialogue, which Damascus predicts will be futile. Then Syria can justify its military operation by accusing the Palestinians and the Left-wing alliance of refusing all offered political solutions.

Reuter adds from Cairo: There are strong prospects for an Arab summit on Lebanon before next month's scheduled full session, Sheikh Hassan Khaled, the Mufti of Lebanon, said here to-day.

## Pretoria claims 200 mile limit

By John Stewart

CAPE TOWN, Sept. 21

SOUTH Africa is about to declare an "exclusive economic zone" (EEZ) of 200 miles off its coast from the Orange River mouth in the west to Fouta d'Oro in the east. Economic Affairs Minister Mr. Chris Heunis will make the announcement within a few days. It is reliably understood.

The announcement will make no reference to two potentially vexed matters—South West Africa (Namibia) and the rights and claims of the three landlocked BSL (Botswana, Swaziland and Lesotho) countries in the EEZ. It is expected, however, that the Namibia problem will resolve itself in the course of next year when the proposed interim government will declare an EEZ of its own and ask South Africa to help police it. The question of the BSL countries will be resolved through a bilateral or multi-lateral treaty.

Legislation giving effect to South Africa's EEZ is being prepared and will be introduced in Parliament early next year. Indications are that South Africa will enforce its 200-mile sovereignty of the sea with uncompromising firmness.

Mr. Heunis' announcement will make it clear that South Africa as a major coastal state, will henceforth make regulations determining exploitation of the fishing grounds after a period of negotiation with fishing nations which currently share the grounds with the republic.

South Africa's position will be explained to foreign fishing nations exploiting the south-east Atlantic grounds at a meeting of the International Convention for South-east Atlantic Fisheries (ICSEAF) in Malaga, Spain, in December. The nations which have ratified the ICSEAF convention are Japan, South Africa, Portugal, USSR, Spain, Bulgaria, Poland, France, Belgium, East Germany, Cuba, Italy, Israel and South Korea. West Germany and Angola will probably join.

Although South Africa will make it clear that it will be the sole authority in respect of its exclusive zone, it has no intention of leaving ICSEAF, membership of which is regarded as important because of beneficial spin offs from joint research and as a point of international contact.

Australia may grant foreign fishermen access to fish within a proposed 200-mile fishing and resources zone, Primary Industries Minister Ian Sinclair said to-day in Melbourne. AP-DJ reports from Melbourne.



Dr. Henry Kissinger and President Nyerere share a laugh during talks at the State House, Dar es Salaam, during which the U.S. Secretary of State briefed the Tanzanian leader on his discussion with Rhodesian Prime Minister Ian Smith. See Back Page.

## Rhodesian forces kill 15 more guerillas

By Our Own Correspondent

SALISBURY, Sept. 21

RHODESIAN SECURITY forces headquarters announced to-day that 15 guerillas and 11 Africans "running with, and actively assisting" guerilla gangs, have been killed since the last communiqué on September 13. Five curfew breakers have also been killed and quantities of war material seized.

Guerillas have "wantonly murdered" six Africans, and two African men and a woman were killed when their vehicle detonated a landmine.

Since December, 1972, 2,229 people have died in the war, including 170 security force members and 1,309 guerillas. So far this month, 154 guerillas and 14 security force members have died.

Meanwhile, the Roman Catholic Bishop of Umtali, the Rt. Rev. Donald Lambert, has pleaded guilty to-day in Umtali Regional Magistrates Court to four charges under Rhodesia's Law and Order (Maintenance) Act.

He is charged on two counts of failing to report the presence of guerillas at Avila Mission, near the Mozambique border, and two counts of inciting others to commit the same offence. Each count carries a maximum penalty of 15 years jail.

About 70 people of all races packed the tiny courtroom, while another 100 waited outside and peered through the open doorway. Observers for Amnesty International, and the International Commission of Jurists were in court, together with four other Roman Catholic Bishops and the former Rhodesian Premier, Mr. Geoffrey Todd.

An agreed statement of facts submitted to the court said that in April a sister at Avila Mission was handed a letter by an African who came from guerillas who requested medical supplies.

Later that day Bishop Lambert arrived and instructed the staff not to report the incident, and said that he would take full responsibility. The next day four armed guerillas collected the supplies.

On a subsequent visit, the guerillas threatened the sister and the head of the mission, and on April 24 all the mission staff left for Salisbury.

In June when the sister returned to Avila Mission, the guerillas armed with the demanded various supplies and these were handed over. The next day, Bishop Lambert visited the mission, but neither he nor the mission staff made any report.

## South Africa plan to study changes in parliament system

PORT ELIZABETH, Sept. 21

DEFENCE MINISTER Pienaar said to-night that a special Cabinet committee had been appointed to investigate possible changes in South Africa's parliamentary system.

He said the British system of Parliament had not worked anywhere else in Africa and that South Africa needed "a unique solution for a unique situation."

The Defence Minister said he foresaw the formation of a canton system where white and coloured bodies would control matters in their respective areas. It was not necessary to follow slavishly the Westminster system, he added.

Mr. Botha, opening the Cape Province congress of the ruling National Party, said his announcement of the committee had been made with the approval of Prime Minister John Vorster.

Political observers said the speech appeared to indicate the Government was hardening its policy of giving coloureds more say in the running of the country. Mr. Botha made no mention of South Africa's black majority.

Reuter

Graham Hutton writes from Johannesburg: South Africa's import bill fell dramatically last month, confirming views that the recession is deepening. August's fall was partly a compensation for the flood of imports in July.

## Cuba troops 'pull out'

DAR ES SALAAM, Sept. 21

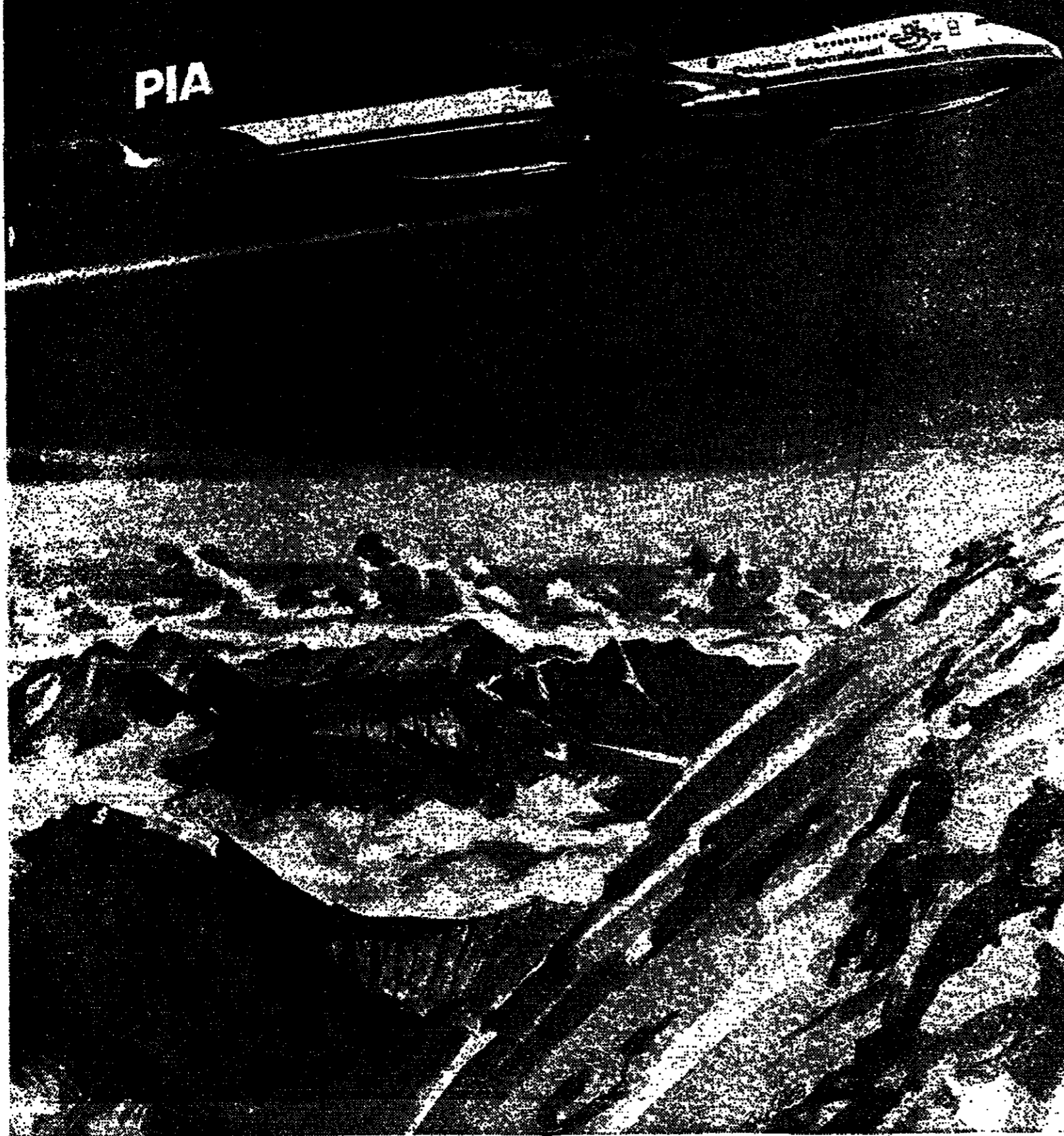
CUBA is believed to have withdrawn 3,000 of its soldiers from Angola in recent weeks, a U.S. official said to-day.

The official, travelling in the party of U.S. Secretary of State Henry Kissinger, said several shiploads of Cuban soldiers had been seen leaving Angola several weeks ago.

But he said Cuba still had more than 10,000 troops in Angola, and added that the U.S. was unwilling to credit Cuba as yet with carrying out the withdrawal that Premier Fidel Castro promised in a letter to Swedish Premier Mr. Olof Palme last May.

Cuba is believed to have sent more than 15,000 soldiers to Angola in recent weeks.

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## OVERSEAS NEWS

## Philippines Council opened by Marcos

MANILA, Sept. 21.

President Ferdinand Marcos yesterday celebrated the fourth anniversary of martial law in the Philippines by opening a new legislative advisory council which said would be the beginning of a parliamentary system in the country.

He told a closely-guarded session that in creating a group, which includes his wife Imelda, Governor of Manila, was following the wishes of the people.

But, he added, he was by no means abdicating his own power. He said he would make laws by decree if he was not elected.

Members of the council, who were appointed and elected by President Marcos, also include cabinet ministers, regional representatives and local government officials.

The council session followed a referendum which would be held next month on whether martial law should be extended or replaced by a parliamentary government, and on constitutional amendments.

President Marcos said that since introduction of martial law in 1972 the Philippines "New Society" had coped with communist insurgency, reduced a Muslim secessionist rebellion and cut down crime and anarchy.

Attacking the previous electoral and governmental system as corrupt and inefficient, President Marcos declared: "From 1972 until the end of 1975 we achieved in those three years more than we achieved in the previous 30 years."

Reuter

## Thailand will ask Thanom to leave

THE THAI Government said yesterday it would ask former Prime Minister Thanom Kittakachorn to leave the country to head off growing student unrest over his return from exile. The former military strong man, ousted from power in a 1973 student-led uprising, returned to Thailand from exile in Singapore on Sunday and immediately entered the Buddhist monkhood, UPI reports from Bangkok.

A spokesman for the government of Prime Minister Seni Pramoj, which held a cabinet meeting yesterday, said a committee would be appointed to negotiate with Thanom for his departure. The National Student Centre of Thailand, which claims a membership of 100,000, said Thanom's presence is a threat to Thailand's peace and demanded that the Government take swift action to prevent mass demonstrations.

## IRIAN JAYA

## Indonesia's poor relation province

BY HAMISH McDONALD, JAKARTA CORRESPONDENT

THE ADMINISTRATION of the Irian Jaya province of Indonesia is struggling with a massive debt burden incurred by irresponsible investment in a situation similar to the scandal of the Indonesian state oil company Pertamina at national level.

The predicament is blamed on the former Governor of Irian Jaya, Brigadier Achib Zainal, who was abruptly recalled to the Defence Ministry last year where he now sits in limbo though on full pay. The parallels with the case of the sacked Pertamina chief, Lieutenant-General Ibnu Sutowo, are clear and indicate that General Ibnu's free-wheeling style of entrepreneurship had spread throughout the state apparatus.

General Achib Zainal committed the provincial administration to a \$US25m. development programme entirely outside the budget he had submitted for Jakarta's approval. Pertamina-style, the comforts of his own personnel were given high priority. About \$14m. was committed to a handsome new government office complex now two-thirds finished on reclaimed land near Jayapura harbour. Officials say another \$30m. may be needed to finish it.

The Brigadier's projects recall Pertamina's former lavishness. As with Pertamina's \$25bn. programme, the financing arrangements tended to be left until after contracts had been signed and work had commenced. Reportedly contracts were padded with generous rebates to government officials.

The problems of the new Governor, Colonel Soetzan, can

be imagined when it is realised that his entire budget for 1976-77 is not quite \$50m., of which only about \$750,000 is an allocation from the central government. Brigadier Achib Zainal still has his defenders who use much the same arguments as are employed to support General Ibnu Sutowo: that he was largely

Papua New Guinea next door its propaganda headquarters are in Senegal. The local Indonesian military commander, Brigadier Ibnu Munandar, claims that 20 guerrillas recently surrendered and another 50 fled across the border.

Irian Jaya was retained by the Dutch after the rest of the Netherlands Indies had become

Schools are numerous in the towns, with no apparent barriers between Irianese and western Indonesian children. The elite live comfortably, but not luxuriously.

The province will have six of the 40 earth stations being constructed to link up to the domestic communications satellite launched on July 8, and now has two or three airfields capable of taking jets. Immense mineral wealth has been discovered, with the giant Freepoint Minerals' copper mine at Tembagapura having recently proven new reserves extending the life of the workings from the early 1980s to the end of the century.

A consortium of American steel enterprises is studying a \$1m. nickel project for Cag Island, near the "Bird's Head" peninsula. Close by, near Sorong, the Petromer Trend Corporation is working one of Indonesia's most profitable oil fields, and other exploration is showing promising results along the south coast. The immense stock of timber has been concessioned out, mainly to Japanese interests, and is expected to enjoy a new boom as the market picks up and the more accessible forests of Kalimantan are worked out.

Yet local Irianese participation is tiny, even in peripheral supply-lines. Much of the food for the towns, even eggs, are flown in from other provinces. Although officials say the Government has slowed down its campaign to "civilise" the Irianese tribes of the mountains and swamps, many instances of heavy-handed authority are reported.



Indonesia appears to be rebounding from the problems caused by the financial troubles of Pertamina, reports AP-DJ from Jakarta. The first statistical report by the Central Bank since Pertamina's collapse more than a year ago suggests that Indonesia's foreign-reserve position has improved with increased oil exports.

It says that Indonesia's foreign reserves rose in the first 7 months of this year to equivalent of \$1.1bn. from \$490m. last December.

a self-trained administrator trying to break the stifling bureaucracy besetting Indonesia, unorthodox though his methods might have been. But according to one senior military officer familiar with Irian Jaya: "Achib Zainal just made the gap too wide. Irian Jaya is not ready for the projects he started. Too big a gap between those at the top and the small people will damage stability."

The blunder will inevitably increase the widespread resentment among the Melanesian-race Papua Organisation (OPM), is once described as shabby and depleted, are energetic South-East Asian towns with a variety of markets and shops, and efficient public transport systems.

independent as Indonesia. A trazi-comic military confrontation forced the isolated Dutch to hand it over in 1962-63, with expectations raised by a last-minute crash development programme.

The new rulers, in a country put into economic reverse gear by the late President Sukarno, plundered their acquisition. The Suharto government has made some impressive efforts to remedy the damage and speed up development. Jayapura and Biak, once described as shabby and depleted, are energetic South-East Asian towns with a variety of markets and shops, and efficient public transport systems.

## Bangladesh politics move

DACC, Sept. 21.

THE Bangladesh Government asked to furnish further details pending their approval.

The left-of-centre Peoples League is led by Dr. Alim al-Razee, a former parliamentarian and the Moslem League is led by Khan Abdul Sabur, one-time senior minister in the Pakistan Government who holds Rightist views.

The Government news agency said 45 groups have applied for clearance. Seventeen were told they had produced incomplete applications and 24 were told they would receive replies shortly.

Reuter

## Pakistanis died on voyage to UAE

SIXTEEN Pakistanis drowned and others died on a larger, fast and overcrowding on a three-day horror voyage in two packed ferries carrying 1,150 illegal immigrants to the United Arab Emirates, police sources said in Abu Dhabi yesterday, Reuter reports.

The bodies of 30 Pakistanis who died in the mass attempt to land would be buried in the emirate of Fujairah on the Gulf of Oman, the sources said. The captain of the two ferries ordered those still on board to jump into the sea when a police patrol surprised the boats unloading men, women, children and old people on to the beach in the pre-dawn hours. More than 600 Pakistanis were arrested and police said they were still hunting scores of others who escaped into the hills above the landing beach, a search was also going on for more bodies. Those arrested will be deported.

## Japan examines MiG

U.S. and Japanese experts examining the super-secret MiG25 flown to Northern Japan from Siberia by a defecting Soviet pilot may learn a lot about Russian weapons systems, a U.S. military source said on Tuesday, according to UPI in Tokyo.

The source said the experts now dismantling the aircraft at Hakodate Airport, 500 miles north of Tokyo, will seek to learn how sophisticated the computing of the aircraft's weapons aiming radar and electronic countermeasures systems are.

"I'm sure the Japanese will be looking at that aspect of the plane and it is a question that we would be interested in," the source said.

## Bass Strait drilling

Broken Hill Proprietary (BHP) and Esso Exploration and Production Australia expect to resume drilling in the Bass Strait towards the end of the year, when at least two wheels will be drilled, BHP chairman Sir Ian McLennan said in Melbourne, Reuter reports.

In the longer term, liquefied natural gas exports from the north-west shelf should offset the diminishing returns from the Esso-BHP Bass Strait gas/oil fields when oil production from this area begins to decline early next decade, he told the annual meeting.

## Israel F15 purchase

Israel is considering ordering more McDonnell-Douglas F15 jet fighters because of concern over a growing Arab air combat fleet, the Boston Globe reported yesterday, UPI says. The Globe in a report from Washington quoting "well-placed" sources said Israel will get the first deliveries from an order for a squadron of 25 F15 within a few weeks and was considering "whether to double that order."

The Globe said Israeli Air Force Chief Gen. Benie Pelled "headed a team which recently visited F15 and F16 production facilities and bases in the United States."

"Well-placed" sources say Israel perceives a possible air combat weakness over the next five years, partly because of modern Soviet jets in Syria, Egypt, Iraq and Libya and partly out of concern that the latest U.S. jets headed for some of the Persian Gulf states might become involved if there is another Arab-Israeli war during that period," the Globe said.

## Emperor opens Diet

Emperor Hirohito attended the opening ceremony of the Japanese Diet (Parliament) yesterday, and told lawmakers to carry out their duty "in response to the people's trust," reports UPI from Tokyo.

The Emperor's appearance in the Diet marked the formal start of the 78th session of the legislative body which was called by Prime Minister Takeo Miki's conservative Government to discuss key financial bills pending since early this year. Communist Party members, who oppose the Emperor system, boycotted the ceremony attended by members of the lower and upper houses.

## New Ethiopian notes

Ethiopia today announced plans to introduce new bank notes next month to replace those bearing the head of the late Emperor Haile Selassie, overthrown in a military coup two years ago, Reuter reports from Addis Ababa.

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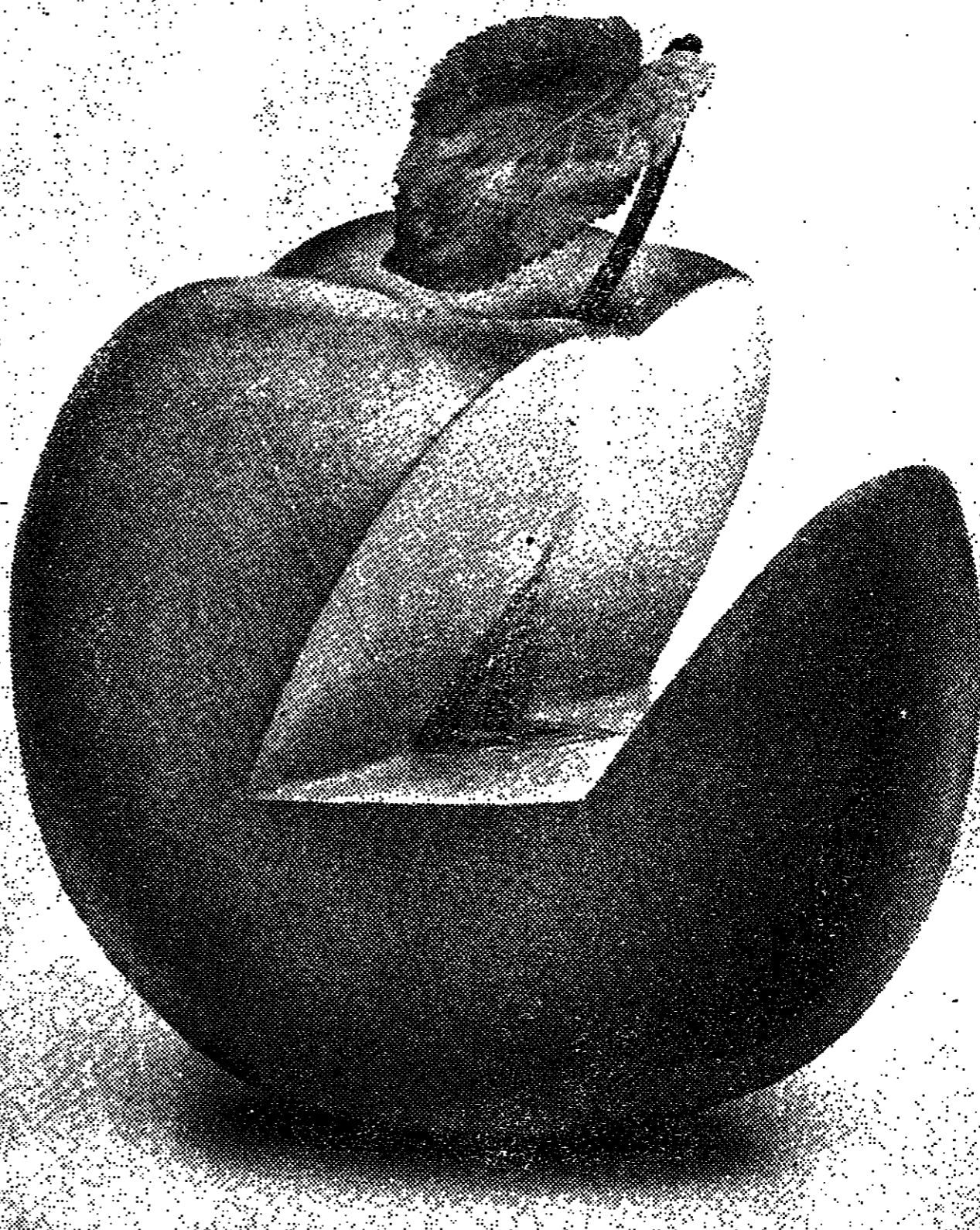
## WHERE GOES SWEDEN NOW?

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## WORLD TRADE NEWS

## Pledge sought on nuclear safeguards

BY DAVID FISHLOCK

NUCLEAR EXPORTING nations should make it an absolute condition of any contract that the receiving nation accepted UN safeguards against proliferation of nuclear arms on its entire nuclear programme, and not just on the imported portion, Dr. Sigvard Eklund, director-general of the UN's International Atomic Energy Agency, told its annual meeting here today.

In an uncharacteristically blunt public statement on the dangers ahead from nuclear proliferation, Dr. Eklund warned delegates in the opening address that they could be "needing the end of the line" with the Non-Proliferation Treaty (NPT), negotiated six years ago.

Certain countries showed no signs of accepting the NPT or of voluntarily placing the whole of their nuclear activities under IAEA safeguards.

"Although he did not name any nation, it is understood that the nations causing the Agency greatest concern at present include the host country, Brazil, and its treaty with Germany for joint development of uranium enrichment and nuclear fuel reprocessing, together with Argentina, Egypt, Israel, Pakistan, Spain and South Africa.

At present these nations remain free to attempt to build on imported technology and "know-how" to create an independent basis for nuclear arms having enough native novelty to constitute no infringement of the terms of their contracts.

Safeguards were a contentious topic, Dr. Eklund acknowledged. Contrary to what some nations professed, "safeguards are not loved by many nations." But for the first time in man's history an international safeguard system had been established and recognised.

IAEA safeguards were already being applied to all nuclear installations in many countries that had not formally accepted total safeguards under the NPT.

In my view such countries would lose nothing and gain much by formalising the situation."

Japan's ratification of the NPT earlier this year brought the number of parties to the treaty to one hundred. They included three nuclear weapon states, the U.K., the U.S. and the USSR—and more than 70 developing nations. All major industrial non-nuclear-weapon states had accepted the NPT and its associated IAEA safeguards regime for nuclear installations, he said.

Dr. Eklund described reports of progress in the series of "secret" London meetings on proliferation between nuclear exporting nations—the last was in June—as "heartening" but appealed to the participants to keep his agency officially briefed on progress.

Interviewed by the Financial Times, Dr. Eklund said he had no doubt that the non-signatories to the NPT would not welcome his proposal for tighter safeguards, but he saw no other way of avoiding the divergence of the NPT regime and agency safeguards.

He did not see the London meetings as threatening to create a rival organisation, but rather as a group able to discuss certain questions about proliferation in a "less politicised atmosphere."

A major study by the Agency of the concept of regional fuel cycle centres, originally proposed by the IAEA and endorsed by Dr. Henry Kissinger a year ago, has been abandoned as "impossible" politically, the idea of geographical groupings of nations to participate in multi-national fuel

factories maintained under IAEA safeguards.

Instead it is exploring the idea—favoured by the U.K. Government—of multi-national factories owned by nations with special affinity of interests, as illustrated for example by Britain and Japan.

A status report just released by the Agency says that it has become evident that at least one of the partners in any such project would have to be able to contribute technology, the necessary industrial infrastructure, and part at least of the finance.

Dr. Eklund believed that the study so far "tends to indicate that such projects could be advantageous from an economic, safety and physical security and safeguards point of view."

He has recently approached Finland and Sweden as potential participants in such a project in Europe and received a "positive" initial reaction.

But Dr. Eklund said that an important facet of the Agency's study was hampered by the reluctance of commercial reprocessing operators who, although not obstructive, were unwilling to contribute economic data and technical experience.

RIO DE JANEIRO, Sept. 21

## Czechs claim U.K. hampers trade growth with EEC

BY KENNETH GOODING, INDUSTRIAL CORRESPONDENT

THE U.K. was singled out as the country which had been particularly responsible for putting a brake on trade between the Common Market and the Czechoslovakian Minister of Foreign Trade, Mr. Andrej Burek, at the Brno engineering fair.

Up to 1974, he said, the Czechoslovakian country had been quite successful in liberalising trade with the EEC. But this changed last year because of the action by Britain "and some other countries."

Mr. Burek referred in particular to voluntary undertakings given by Czechoslovakia to hold back exports of shoes and men's suits to Britain—"a strange way of limiting trade."

But in spite of the Minister raising this point once again, there are no signs that any damage, either short term or permanent, has been done to Czech-U.K. trade relations.

According to one of the British contingent at the fair, which ends this week (September 23), "the only time the Czechs will buy from the West is when they have to. And we have seen no sign at all that the British are not just as welcome as they have ever been."

Mr. Burek made it clear that the Czechoslovakian country continues to seek long-term agreements with the EEC which would set targets for the exchange of goods even though several previous attempts had met with no success. The EEC Commission was currently studying the latest proposals, he said.

Although over the past five years the volume of trade between the two groupings had tripled to \$250m., such an agreement would accelerate the growth of trade and widen the range of products involved.

"I personally believe that partnership and co-operation with Czechoslovak companies should be interesting to their partners in the capitalist countries, particularly now, when there is much unutilised production capacity and 'free financial funds in the West,' he said.

As it happens, U.K. representation at the fair has been as heavy as ever this year. About 70 companies are exhibiting (out of the total of 2,000) mainly under group arrangements made by either the Birmingham Chamber of Commerce, the Federation of Construction Equipment Manufacturers, the Machine Tool Trades Association or the Scientific Instrument Manufacturers Association.

This enabled the British Overseas Trade Board to give assistance.

## Algerian \$54m. order for Verkor

Financial Times Reporter

INTERNATIONAL SYSTEMS and controls (ISC) announces that its wholly-owned Belgian engineering subsidiary, Verkor, has been awarded a \$54m. contract to design and supply a full integrated industrial plant for the production of particle board, plywood, veneering and sawn timber in Algeria. The contract was awarded by the Algerian Government, the Société Nationale des Industries des Lignes et du Bois (SNILB).

Financing for the project was arranged by ISC and Verkor and will be provided through Kredietbank of Brussels, and guaranteed by the Belgian Export credit agency, Dacrole.

The plant will be located at Khenechla, in eastern Algeria, and will utilise local timber and fibre resources. The complex is being designed to annually produce 17,500 cubic metres of 5mm particleboard, 12,500 cubic metres of 8mm plywood, 4,000 cubic metres of veneer, and 8,000 cubic metres of sawn timber. The output will go into particleboard panels, plywood and cabinetwork panels, cross-grained veneerings and building materials.

Verkor, which was incorporated in 1963, was acquired by ISC in April, 1974. The Belgian company has developed proprietary particleboard and process technology and first developed the process to produce linex Verkorboard from saw shives.

## Japanese TV producers may restrict exports to U.S.

BY DOUGLAS RAMSEY

TOKYO, Sept. 21

FACED with new moves in the U.S. to restrict imports of Japanese colour television sets, the Japanese electrical appliance industry is now militating for pre-emptive voluntary restraint as the lesser of two evils. Despite this apparent reversal in the industry's position, however, the Ministry of International Trade and Industry (MITI) is sticking to its guns, and vice-minister Toshinobu Wada today reiterated that MITI has no intention of asking the industry to limit its exports.

Mr. Wada's denial, however, is diminished by his simultaneous admission that "MITI is now keeping an eye on these exports of colour televisions."

It is understood that this surveillance covers not only market shares of Japanese exporters to the U.S., but also export prices and contracts with American buyers.

The new industry position was clear in a statement on Monday by Mr. Kaoru Iue, president of Sanyo Electric, in which he indicated Sanyo and other colour TV exporters cannot help but impose voluntary restrictions on our exports to the U.S. under the administrative guidance of MITI. "It is not yet clear though, whether Sanyo's view is as strongly held among its competitors."

Mr. Iue's statement was apparently prompted by reports that a group called Compact (the American colour TV industry protection committee) is about to petition the U.S. International Trade Commission (ITC) for unilateral restrictions on the level of Japanese imports. Sources at MITI here say that no official communication has been received from the ITC through diplomatic channels, but that MITI understands the Compact request is based on clause 301 of the 1974 U.S. Trade Act. This is the so-called "escape" or "safeguard" clause which would permit restrictions if a surge in imports has caused undue damage to the American colour TV industry.

In 1974 Japanese sets accounted for around 12 per cent. of colour TV sales in the U.S., then jumped to 19.5 per cent. last year. So far in 1976, exports have been running at over three times the level of last year, and the industry expects that if this trend continues, Japanese sets will garner a massive 30 per cent. of the U.S. market.

The compact petition to the ITC is the second major private initiative in a matter of months by U.S. manufacturers to control Japanese imports. Last March, several American companies including Sylvania, Philco and Zenith asked the ITC for a ruling against Japanese exports under Article 337 of the Tariff Act. This article, as amended by the 1974 Trade Act, calls for quantitative restrictions in the event of "unfair trade practices" on the part of foreign exporters. In the petition brought by the U.S. com-

panies, Japanese exporters were charged not just with dumping, but more especially with benefiting from Government incentives which actually made the dumping possible.

The ITC has not yet ruled on the March petition, and sources here say such investigations can take between a year and 18 months to run their course. This lengthy process is no doubt a key factor in the Compact decision to bring suit on other grounds, for example damage to the domestic industry caused by the higher level of imports.

It will not be hard to prove how many more colour sets the Japanese are selling on the U.S. market this year than last, and the Compact group is obviously counting on the Presidential election contest to swing President Ford to their side: he would stand to win votes by seeming to protect domestic industry (and labour, since trade union representatives are also members of Compact) from the Japanese trade onslaught. Under the provisions of the escape clause, President Ford could either increase the tariff on colour TV imports, or else put a quantitative ceiling on future deliveries.

As long as the ITC was digesting and investigating the

## P.O. orders from Mitsui in London

By Christopher Lorenz, Electronics Correspondent

MITSU has become the second major Japanese group in less than a year to choose London as the centre for a private communications system.

Following the lead set by Mitsubishi, the Mitsui trading company awarded the installation and operations contract to the British Post Office; in Mitsui's case, this will bring the P.O. more than \$600,000 of annual revenue.

The system is based on a message-switching computer and links more than 40 private telegraphic circuits between Mitsui offices in Europe, the Middle East and Africa. The system is also linked to Mitsui's own computer in Tokyo.

The new London installation will act as a "clearing house" for more than 20,000 messages a day; the purpose of the computer is both to control the switching of messages and to operate a storage and retrieval system which holds them for up to three days.

Since the P.O. began offering international leased telegraph messages switching services in 1971, nearly 30 organisations have based their international communications centres in London.

## Phosphate projects

Sofimines of France and Schweizerische Aluminium Ag of Switzerland have been awarded a Frs.22m. contract by the Egyptian authorities for civil engineering work involved in a phosphate mine at Abutartur. The mine is expected to have an annual output of 7m. tons of phosphate. The project involves the construction of a town of 30,000 inhabitants, a port on the Red Sea, and 500 kilometres of roads.

Meanwhile British Rowway Engineering received an order worth over \$300,000 from Stone and Webster Engineering for mechanical handling plant to provide increased ground storage for rock phosphates at the Shapur Chemical works at Bandar Shapur in Iran. Delivery of the new plant is scheduled for completion by August 1977.

## Nuclear refrigeration

Carrier International has received a "multimillion dollar" contract to build a central refrigeration plant to cool the two giant new Iranian nuclear generating plants, Iran I and Iran II. Together these power stations will generate 2,400 megawatts of electricity when both are in operation in 1981.

The eight Carrier centrifugal machines making up the refrigeration plant, it is claimed, will be the largest ever built. They will produce a total of 80,000 tons of cooling (242,000 kW) of cooling. The machines will be delivered in 1978 and 1979.

## U.K. invisibles surplus

BY DICK WILSON

BRITAIN'S \$363m. visible trade deficit with Japan last year was more than covered by a \$875m. surplus on invisible account covering shipping, insurance, tourism, royalties and financial services.

Bank of Japan statistics show an eight per cent. expansion in U.K. invisible earnings from Japan to reach \$2,900m. in 1975. The major increases were in insurance (up 35 per cent. to \$405m.) and investment income (up 22 per cent. to \$882m.). After deducting \$1,400m. for Japanese invisible earnings from the U.K., this left a net U.K. surplus of \$1,500m., which at 1975 exchange rates approximates to \$875m.

## Mission to Peking

TOKYO, Sept. 21

JAPAN'S ASSOCIATION For Promotion of International Trade said that a mission including trading company and bank executives will visit Peking for about seven days in early October to discuss ways of balancing trade between the two countries. Japan had a \$330m. trade deficit with China in 1975, and a \$306m. surplus in the first three months of this year.

Meanwhile the Japan-China Machine Trade Association said that Japan's machinery exports to China in July had a total value of \$39.4m. on a customs clearance basis, down 28.9 per cent. from a year earlier. The exports accounted for 28.4 per cent. of the \$135.533m. in total Japanese exports to China in July.

## High export hopes for Racial Radio

FINANCIAL TIMES REPORTER

A MAJOR contract for new radio equipment for the British Army's Clansman communications system is announced by Racial-Tacticon, part of the Racial Electronics Group.

The contract, thought to be worth \$5m., is initially for a substantial supply of a personal radio—the Racial U.K./PRC-349—for use by front line forces. It is said to be the smallest and

most technically advanced military VHF radio of its type in the world.

This order is expected to lead to orders worth at least \$5m. at home with huge export sales in prospect. Mr. David Elwyn, managing director of Racial-Tacticon said: "The export potential of this British-made 400 channel radio is enormous. The acceptance of the set for use in the Clansman combat radio system will give overseas sales a

## India's iron ore ambitions

BY P. C. MAHANTI, OUR CALCUTTA CORRESPONDENT

ALTHOUGH INDIA exported 23.5m. tonnes of iron ore in 1975-76 it contributed only 5.5 per cent. of the total world trade in iron ore in that year. India now wants to expand its share by a number of ways.

The most significant of these is the Kudremukh iron ore project on the West coast which is being developed entirely by export iron ore to Iran. Iran is financing the whole cost of this project, now estimated at \$630m. It is a course of loan which will be repaid in kind through ore exports. Iran has already advanced \$100m. of this amount so that work can progress as scheduled.

According to the construction and delivery schedules fixed under the relevant Indo-Iranian Agreement the project is to be completed in 4 1/2 years' time from now so that the first shipment starts in 1980. A total of 150m. tonnes will be shipped over a period of 20 years—7.5m. tonnes a year to the National Iranian Steel Industries Company.

The Kudremukh project is the biggest iron ore mining enterprise in India so far. According to the Indian Ministry of Steel and Mines, comparatively new and sophisticated techniques and equipment like magnetic concentration, slurry pipeline and very large size mining equipment will be employed at Kudremukh.

The agreement with Iran provides that for the timely construction and smooth operation of the project, a well-experienced and reputed mining associate and engineer contractor should be appointed. Accordingly, the Indian Government has just chosen the Montreal-based consultancy concern of Met-Chem Consultants as "mining associate and engineer contractor." This company, which is a subsidiary of the U.S. Engineers and Consultants itself a wholly-owned subsidiary of the U.S. Steel, will be responsible for planning, design, engineering, project management and supervision, as well as the operation of the plant for the first three years. The Indian undertaking, Kudremukh Iron Ore Company, will retain overall control, and will ultimately run the project entirely with its own personnel.

The target for India's iron ore exports is being progressively raised from 1976-77 onwards.

lack of bulk handling facilities in India ports, especially on the West coast. For instance, the Mangalore Port on this coast, through which all the iron ore from Kudremukh will be shipped, must have the facilities for handling 60,000 dwt bulk carriers ready before shipping can start. These facilities are to be installed as part of a complete modernisation programme for the port which is being put through.

Even before the Association of Iron Ore Exporting Countries' had been formed to get better terms for their ore through collective action, India last year managed to secure substantial increases in prices from Japan and other importers.

This explains the 34 per cent. rise in earnings from iron ore exports in 1976-77 while the volume went up only marginally.

India is taking another route also—by exporting the ore in pellet form which brings in a much higher price than when only ore fines are exported. A small pelletisation plant of 0.5m. tonnes has been shipping its entire output to Japan since 1967. Now another plant of 1.5m. tonnes capacity is being built for export to the same destination, while Iraq has offered financial aid for a 2m. tonne plant that India proposes to set up for Iraq only.

## Aker hopes for Shell contract

By Fay Gjester

OSLO, Sept. 21

NORWAY'S AKER shipbuilding group is negotiating with Shell about installation work on two steel decks for production platforms destined for the Brent Field, a spokesman for AKER has confirmed. However, he said no contracts have yet been concluded.

The concrete sub-structures of the platforms are now under construction in Scotland, while one deck is being built at a French and the other at a Dutch yard.

If AKER could secure installation work on the two decks, it would provide welcome employment for the group's Stord yard next year. Existing orders will not keep the yard busy much beyond the spring.

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## HOME NEWS

## No rush for new North Sea exploration licences

BY RAY DAFTER, ENERGY CORRESPONDENT

THE DEPARTMENT of Energy has cleared the way for a substantial list of applications for fifth round offshore exploration licences.

As yet, however, not a single oil company has applied for one of the 71 blocks and part blocks which are on offer, although the closing date for applications is only a fortnight away.

This is not unusual. A U.S. oilman commented last night: "You get no Browne points for applying early." The Department of Energy confirmed: "Judging by past form, we would not expect to receive the bulk of applications until the last week."

The Department is expected to award the new licences late this year or, possibly in January, Mr. Anthony Wedgwood Benn, the Energy Secretary, sees the fifth round as the start of a new phase in offshore exploration and development. The round is much smaller than those in the past, indicating that allocations may be made more frequently in future, and for the first time the British National Oil Corporation will have a majority stake in all licences from the outset.

Offshore operators had warned the Energy Department that unless BNOC paid its full share of development expenses, as the costs were incurred, the Government might be faced with a

mutual industry response to the fifth round. Companies told Government officials that a plan to give BNOC a "carried interest" in offshore development was causing concern among those involved in financing offshore operations. In effect, under the draft conditions for the fifth

round oil companies faced paying for BNOC's share of development costs, only to be repaid once the field started producing oil and yielding revenue.

Late last week Mr. Wedgwood Benn said that the idea of a "carried interest" for BNOC was being dropped. The Corporation would pay its way as a full commercial partner.

## Expectations

Mr. Wedgwood Benn said the change of heart reflected the growing strength of BNOC which was emerging as a "major force in the world's oil industry." He denied the announcement, coming so near to the expiry of the fifth round application period, was intended to influence development expenses, as the oil company thinking. He was expecting a big response, he said.

## More Home News

Pages 12, 16

However, it is evident from inquiries within the industry that if this important change had not been made there could have been a lack of serious interest in some of the less tempting blocks in the fifth round.

British Petroleum is watching with interest the latest drilling operation on block 21/2 close to its Forties Field. BP has agreed, subject to Energy Department and other approvals, to take a stake in the block and two others (29/6 and 29/7) held under licence number P244.

BP has accepted the cost of certain drilling having acquired a 15 per cent. interest in the stakes held by Zapata Exploration, Canadian Export Gas and Oil and Carless Exploration. Under the agreement BP is to pay a substantial part of the drilling costs on the present well. Total drilling costs could be as much as \$8m. (£3.4m.). This well is likely to reach total depth in about one month's time. BP has also agreed to pay a large proportion of costs if a fourth well is drilled.

The 21/2 block contains two reservoirs of interest to British Petroleum. An oil field, discovered last year, is thought in the past 18 months, admittedly as a result of inflationary pressures in the production countries and sterling's decline, while oil prices have not moved

CLOSE observers of annual figures coming from major Scandinavian paper and pulp companies have not been surprised by the crisis threatening the existence of one of the U.K.'s largest paper mills, Reed's Imperial at Gravesend.

Nor is the industry as a whole happy about a trend in pulp prices, reflected in the profits of those Scandinavian companies, which has steadily been working away at their margins on U.K. paper sales.

Blithely, British and European paper mills, dependent on imported pulp and forced to compete in increasingly free markets with Scandinavian companies which can influence the price of that pulp, are extremely worried about recent trends.

## Powerless

They argue that margins on pulp are too high (although not great) in relation to margins on paper, and they are powerless at present to exert any influence on pulp producers, including Canadian companies.

The price of market pulp has risen by about 35 per cent. in the past 18 months, admittedly as a result of inflationary pressures in the production countries and sterling's decline, while

significantly in relation to cost input. As a result, the producers of high-volume grades of paper, newsprint and mechanical printings (which are largely dependent on imported pulp), have suffered seriously. Imperial has suffered sold in dollars and paper, in sterling is nevertheless hard on U.K. companies.

What is not revealed in the reports of Scandinavian companies, enjoying the advantage of integrated mills, producing both pulp and paper, is the real cost of pulp in their own paper-making.

But it is estimated that these mills can break even at around 55 per cent. of capacity on pulp production and 75 per cent. on paper, while an equivalent U.K. mill would need to operate at 90 per cent. to break even.

But the events of the last two years—booming paper demand, the oil crisis and inflation among them—moved both prices rapidly upwards, yet significantly altered the price ratio to nearer 30 per cent. in some cases, such as newsprint.

It is estimated that in the U.K. these ratio changes have been half attributable to first price increase and half to sterling devaluation. The problem is now evident in France as well because of the weakness of the Franc.

More strident critics of Scandinavian competitors suggest that

## NEWS ANALYSIS • PAPER AND BOARD

## Squeezed by the cost of pulp

BY LORNE BARLING

these currency problems are begrudging this profit in itself, it unlikely that supply and demand would be in balance even without a pulp increase.

The alternatives facing the European industry, which has not been quick to see the dangers, are all problematic, assuming that they will aim to restore a more balanced price ratio.

Made great strides in introducing new technology such as deinking equipment for waste recycling, has been one of the worst hit by these pressures. It is currently using between 30 and 40 per cent. waste in its newsprint furnish, but its future at Imperial (as a low added value product) must be in doubt.

The mill, with five machines, is relatively modern but lacks the flexibility of smaller operations to match products to available markets as many other British companies can do.

There have been recent reports that pulp producers are to seek further price rises in January next year, again with Scandinavian making the running. But the Imperial crisis and the possibility of similar difficulties in France may instil caution on their part.

There is already considerable overcapacity in Europe in the pulp and paper industry, which is not expected to be taken up for several years, making it

unlikely that supply and demand would be in balance even without a pulp increase. The alternatives facing the European industry, which has not been quick to see the dangers, are all problematic, assuming that they will aim to restore a more balanced price ratio.

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## Resistance

One means is to increase paper prices, which mills would welcome but treat with caution because of possible consumer resistance. A reduction in pulp prices, the simplest option, would be strongly resisted by producers. Similarly, pulp mills would be unwilling to hold prices steady while inflation continues to erode their margins.

The ultimate sanction remains the treaty between the EEC countries and the non-candidate former EFTA countries, which includes a clause relating to the abuse of a dominant trade position. This could be referred to a joint commission for their decision and possibly end in the suspension of tariff concessions.

However, this is an "unlikely outcome unless some or all of the EEC countries find that their paper industries are being damaged beyond a tolerable level."

## Worst hit

It is argued that the Scandinavian producers are to seek further price rises in January next year, again with Scandinavian making the running. But the Imperial crisis and the possibility of similar difficulties in France may instil caution on their part.

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## Shell soon resumes Celtic Sea search

ANOTHER upturn in Celtic Sea exploration comes with confirmation by Shell (U.K.) Exploration and Production that it is to resume activities soon.

The company's exploration department has said that it is to drill block 103/18, one of 12 concessions in which it holds exclusive rights in the U.K. Celtic Sea, during the autumn.

The block is 26 miles south-west of the entrance to Milford Haven and within 35 miles of Shell's 18-acre supply base at Pembroke Dock.

Shell has not named the rig to be used but the newly-built semi-submersible unit, Sedco 707, partly owned by Shell, is expected to leave a New Orleans shipyard soon to drill its maiden well in the Celtic Sea's British sector.

The rig is to operate in 800 feet of water and drill nearly five miles into the seabed.

In 1973 Shell became the first company to drill in the Celtic Sea. The well, on block 102/52, was more than 40 miles south-west of the new location, was abandoned as a dry hole.

After the war it was the turn of wildlife. Sir William's interest had been awakened through his New Naturalist series, started with Julian Huxley and James Fisher. Collins discovered Elsa, which specialised in diaries, calendars and the Bible. He a new kind of best-selling book then started the general publicising list for which the company emulated.

He proved an energetic and ambitious publisher with an eye for a best-selling author. His arrival in London coincided with the heyday of the library novel era and one of his earliest successes was Winifred Holtby's South Riding. Authors such as Howard Spring, William Armstrong and the signing of Agatha Christie and more recently Alistair Maclean. Biography and military history were by a robust charm and his mind other areas to be explored, science as a host.

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## Leyland top job again vacant

By Kevin Done

BRITISH LEYLAND is expected to announce a replacement next week to head its parts and service operation, the second time the job has become vacant in 12 months.

Mr. John Egan, aged 38, the present director, has been appointed European marketing director of Massey Ferguson's industrial and machinery division, based in Rome.

His successor is expected to come from within the British Leyland ranks in line with the determination of Mr. Derek Whitaker, the managing director of Leyland Cars, to avoid the constant changes in the command structure, which were a feature of the previous British Leyland organisation.

Three schemes  
The last Leyland senior executive to resign was Mr. Ron Ellis, who departed last month to take up the post of head of defence sales at the Ministry of Defence. He is believed to have left after having an increasingly stormy relationship with Mr. Alex Park, the group's managing director.

Mr. Egan, who joined Leyland five years ago, was responsible for setting up three major schemes: Unipart, Supersaver and ST-Bus. The operation which has welded together several previously separate components groups and now has a turnover of



## Peter Kilpatrick's a roughneck. His mum doesn't mind.

Until a year and a half ago, Peter was in hotel management in Birmingham. That's a pleasant sort of work. Mostly a matter of keeping the guests happy by making sure things in the hotel are going right.

So when he went home to Newcastle-upon-Tyne and told his family he was giving up the hotel job to become a roughneck, it took a bit of explaining. A roughneck, he told them, is a chap on an oil rig who helps the driller. It's a dirty job and a tough one. But this would be important, since it would put him bang in the middle of the North Sea work. The Kilpatrick family finally agreed that it sounded quite an adventure, and wished Peter well.

Now Peter Kilpatrick is on Beryl A platform, about 100 miles southeast of the Shetland Islands, where Beryl

field — one of the big ones — has been discovered. Like most of the men on the platform, Kilpatrick works two weeks and then takes two weeks off. When he works, he *really* works. Twelve hours a day, seven days a week, in weather so fierce so much of the year it's hard for most people to picture. Peter likes it. He says the hard manual work is a lot more satisfying than fussing about in a hotel.

Peter Kilpatrick, roughneck, is part of one of the most ambitious, difficult, costly searches in history. Mobil has been in the thick of it from the start. Of course, our ties with Britain go back much further — to the 1880s.

More money and effort have been concentrated in this small area over the past decade, for oil exploration, than has ever been brought together anywhere else in the

world. We and our partners, for instance, have invested more than £150 million in the Beryl A platform where Peter works, and spend about £30,000 a day to keep the platform operating.

The North Sea search is critical. If enough oil can be found, Britain will achieve the self-sufficiency she hopes for by the 1980s. That would help a very great deal to brighten an economic picture in this country which has been rather dark lately. The British have seen dark times before and worked their way out of them. Men like Peter Kilpatrick are helping the nation out of its current tight spot.

North Sea oil won't solve everything. But it should provide a good boost. No wonder Mrs. Kilpatrick is not unhappy with her son's new job.

**Mobil®**





Philip Attenborough (Chairman of Hodder & Stoughton)

# "There may be aspects of our business where Midland Bank support isn't vital, but it's hard to think of any"

-Philip Attenborough, Chairman of Hodder & Stoughton.

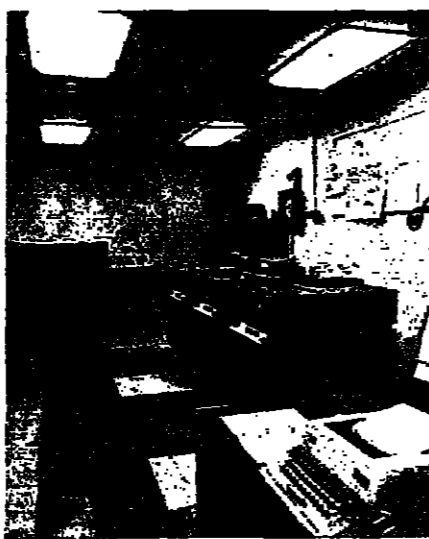
"Book publishing is many things," says Philip Attenborough, "but most of all it is an act of faith. The process begins with the faith which leads an author to entrust a book to Hodder & Stoughton in the first place. It involves faith on our part, both in the author's work and in our ability to publish it well. Most of all, it involves faith in our judgement of how best to produce, market and sell books."

## World markets

"But faith implies risks, and the risks of publishing are multiplied by the number of books we produce and the number of markets in which we deal."



Editorial Department



Computer Area

"From humble beginnings in 1868, Hodder & Stoughton now has about 5,000 different titles in print. And because books are a universal means of communication, we now sell to almost every country in the world."

"Because of faith in our main overseas markets, we have established local companies, representatives and agencies in them. All these are supported by a constant export drive carried out by salesmen flying out from London. My own career has been largely bound up with overseas expansion, and I have personally sold books in 54 different countries."

"Naturally, these operations require sophisti-

cated financial support of many kinds, and that is why the faith of the Midland in us has been so important over the years"

## Midland Bank support

"Since Matthew Henry Hodder and Thomas Wilberforce Stoughton founded the business 108 years ago, we have expanded enormously," says Philip Attenborough. "This expansion has called for



Reception Area (London)

some very understanding bank managers over the years, all of whom have occupied the same office of the same Midland branch in London."

"The Midland has always advised us well. It has also been our chief ally in financing our growth into a £10 million company. And it has recently provided essential support for the building of our new computerised warehouse in Dunton Green, Kent. The computer itself is leased from Midland Montagu Leasing, another Midland Bank Group company."

"The bank helps in other ways. It helps with cash-flow problems which are seasonal, largely because of royalty payments to authors. On the export side, we draw and discount bills through the Midland, and they operate valuable ECGD facilities for us. Throughout the year they handle a large volume and variety of overseas transactions and

provide us with essential credit information."

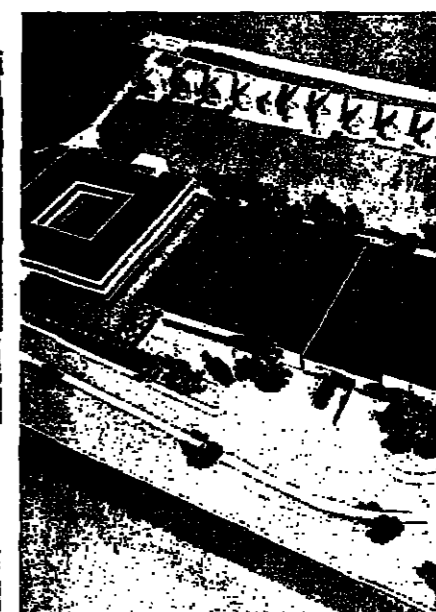
"At a more everyday level, most of our staff bank privately with the Midland, and all our salaries and wages are handled by the Midland's computer service."

## Future growth

"The paperback market will keep growing," says Philip Attenborough. "So will our overseas markets. Children are reading more books than ever before. And there are important developments in the supplementary technologies of tape, audio-visual cassettes and microfiches."



London Headquarters



Model of new warehouse which has been constructed at Dunton Green, Kent

"We are confident of our future. Books will last forever. I see no prospect of there ever being a better means of sharing human knowledge, experience and ideas."

"But publishing will go on being an act of faith. So our prospects will continue to be closely linked to our relationship with the Midland."

If yours is a complex and developing business, arrange to meet your local Midland Group manager soon. It might make all the difference to your future."



## Midland Bank Group

**Principal trading companies:** Midland Bank Limited, Clydesdale Bank Limited, Clydesdale Bank Finance Corporation Limited, Clydesdale Bank Insurance Services Limited, Scottish Computer Services Limited, Northern Bank Limited, Northern Bank Development Corporation Limited, Northern Bank Executor and Trustee Company Limited, Northern Bank Finance Corporation Limited, Northern Bank Trust Corporation Limited, Midland Bank Trust Company Limited, Midland Bank Group Unit Trust Managers Limited, Midland Bank Finance Corporation Limited, Forward Trust Limited, Midland Montagu Leasing Limited, Griffin Factors Limited, Midland Bank Trust Corporation (Jersey) Limited, Midland Bank Trust Corporation (Guernsey) Limited, Midland Bank Insurance Services Limited, The Thomas Cook Group Limited, Thomas Cook Limited, Thomas Cook Overseas Limited, Thomas Cook Bankers Limited, Samuel Montagu & Co. Limited (Incorporating Drayton), Drayton Montagu Portfolio Management Limited, Guyerzeller Zurmunt Bank AG, Midland Montagu Industrial Finance Limited, Jersey International Bank of Commerce Limited, Bland Payne Holdings Limited, Bland Payne Limited, Bland Payne Reinsurance Brokers Limited, Bland Payne (UK) Limited, Southern Marine & Aviation Underwriters Inc., Bland Payne Australia Limited, London American Finance Corporation Limited, British Overseas Engineering & Credit Company Limited, Drake (UK) International Limited, Drake America Corporation, Export Credit Corporation.



# The Technical Page

EDITED BY ARTHUR BENNETT AND TED SCHOETERS

## COMPUTERS

### U.K. leads Europe in advanced design

SEVERAL apparently unconnected reasons lie behind the appearance of Ferranti as the only electronics company in Europe to have developed a micro-computer of its own and, at that, a machine made to higher specifications and by a more difficult technology than most of its competitors.

Perhaps the most cogent of all is the realisation, during a design exercise which took place some time ago, that other processors were not capable of being used for the more complex military jobs (and non-military work) which the company knew to be in the offing. One instance was the design of the company's Sonobuoy equipment. With a micro-processor to build up a set of instructions, the handling and interfacing logic for this device would have required the use of 400 to 450 medium-scale integration chips, while with the 16-bit Ferranti design the requirement was only 45.

This does not only mean a reduction of ten to one in device numbers, it also implies vastly less interconnection work, weight, maintenance, etc.

The second spur to development was, of course, the need of the military for a high quality device under their own control for use in applications where precision required is of an order of magnitude greater than possible with 8-bit computers. The joint development work on the device has cost several hundred thousand pounds, according to Ferranti, and is going hand-in-hand with important work to provide software tools that can be used on various other types of large computers to prepare programs for the new unit.

At the same time, prototyping equipment is being made available and work is in hand to write software that will be usable directly on the F100-L, with first products to be released in the first quarter next year. Later, the real-time language Coral 66 will

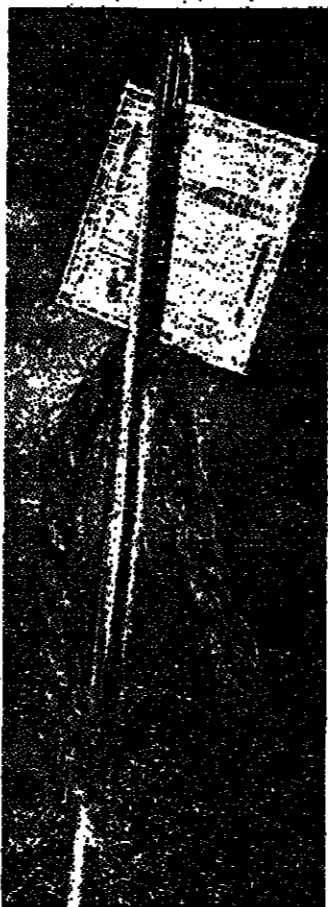
be announced. Meanwhile, to the three basic chips, further bipolar memory and digital/analogue, only electronics company in Europe to have developed a micro-computer of its own and, at that, a machine made to higher specifications and by a more difficult technology than most of its competitors.

Two associated chips—control interface and data interface—would be used with the micro-processor to build up a set of instructions, the handling and interfacing logic for this device would have required the use of 400 to 450 medium-scale integration chips, while with the 16-bit Ferranti design the requirement was only 45.

The computer, made according to Ferranti's own CDI bipolar process, has about 7,000 components in an area only 0.23 inches square. In its military guise, it will cope with temperatures from -55 to +125 degrees C.

Instructions are carried out in 3 to 4 microseconds and the unit is powerful enough to handle up to 32,000 words of 16-bits in semiconductor or core memory. It is significant that at this point in time when some of the largest of the European companies have put their own micro-processor plans in cold storage and come to terms with the rapidly expanding U.S. microprocessor industry, Ferranti is confidently talking about becoming a force in European computer systems in the next five years.

That the European market for such complex electronics devices will grow fast has been predicted by both Frost and Sullivan and Mackintosh Consultants, the latter putting European sales of devices in this class at \$111m. by



## ENERGY

### Solar cell cost drops quickly

THE COST of solar cells, which convert sunlight directly into electricity, has dropped 36 per cent in the past six months, the U.S. Government has reported. The Energy Research and Development Administration (ERDA) said that six months ago it was paying \$21 to industry for a solar cell capable of producing one Watt of electricity. A recent ERDA purchase average \$15.50 a Watt.

It said it had bought 130 kilowatts of solar cells from five companies for use in Government demonstration programmes. The price drop indicated "significant progress" in a drive to make solar electricity eventually competitive with conventional sources.

The effort has a long way to go, though. ERDA says the cost of solar cells would have to drop to about 50 cents a watt to compete with other energy forms. "A goal that might take until 1985 to achieve."

Meanwhile, electronic component makers like Ferranti and Philips seem confident they will achieve the goal much earlier, using semi-conductor technology.

SPACE technology applied to the nickel-zinc battery may help to reduce petroleum consumption as recent tests conducted by NASA's Lewis Research Center have demonstrated that batteries of this type are able to provide almost twice the mileage of conventional lead-acid.

NASA says that a "properly designed" four-passenger electric car would have a maximum daily range of 60 miles using conventional lead-acid batteries. Nickel-zinc batteries are able to provide twice that at 120 miles per day and would be able to meet the needs of 95 per cent of U.S. drivers for a full service urban vehicle.

A sample nickel-zinc battery at NASA's Lewis Research Center, used cells fabricated by two industrial contractors. The cells feature an inorganic separator adapted from space battery technology which promises long life and high performance.

Engineers installed the battery in an Otis P500 electric utility van, using only the battery space available in the vehicle and a battery weight equivalent to the conventional lead-acid battery. Tests showed that the

nickel-zinc battery delivered almost twice as many stop and go driving cycles per charge as the lead-acid battery (130 versus 90). At a constant speed of 20 mph, the nickel-zinc battery ran the delivery vehicle 54.9 miles while the lead-acid battery yielded only 29.4 miles.

Lewis is conducting further studies to optimise the nickel-zinc battery for life, performance and competitive cost. A joint test programme with the U.S. Postal Service will assess the potential of these batteries for use in mail pickup and delivery vans. The batteries will also be evaluated for urban use in a NASA urban test vehicle.

This is yet another battery couple under investigation in the U.S. alongside lead-oxygen, zinc-chlorine and several others. Britain is pinning its faith to sodium-sulphur under active development at the Chloride Group with the encouragement of the Electricity Research Council.

More from Lewis, 21000 Brookpark Road, Cleveland, Ohio 44133, U.S.

PLASTICS  
Laminate takes a hammering

STRUCTURAL strength of a new low-emission styrene resin, introduced by Synthetic Resins to meet the requirements of the Health and Safety at Work Act, was successfully demonstrated at recent high speed trials of a 50 mph speedboat on Lake Windermere.

Introduction of Uralam 25-01A polyester resin followed exhaustive tests not only into the reduction of styrene vapour emitted in processing, but also into maintaining the strength associated with polyester resins. During the trials the boat was subjected to severe buffeting, the hull frequently emerging completely from the water. No damage was caused to the laminate however. SRL, at Edwards Lane, Speke, Liverpool L24 9ER.

Essential data from new centre

ERA's facilities to test creep/rupture, and stress-strain relationships, have been extended to include plastics, alongside existing steel and non-ferrous test equipment. As a result of the increasing demand for time-dependent data on, in particular, engineering thermoplastics, but also thermosets used in electrical and other applications the new laboratory was commissioned. It is fully air-conditioned with temperature control to  $\pm 1^\circ\text{C}$  and relative humidity to  $\pm 1$  per cent. Equipment installed to date comprises a Zwick 250 kg tensile testing machine especially suitable for plastics, and eleven creep/rupture test machines. Work has already been carried out on polypropylene and currently an intensive programme of work on the effect of test

procedures on rupture data is under way. Aspects of the time dependent behaviour of polyethersulphone, a new engineering thermoplastic, are being investigated in conjunction with ICI.

Plans are being formulated, in conjunction with a number of major companies, to look at the economics of bulk data collection, in order to provide design engineers with more information relevant to the design of long-life products. Further from Dr. M. P. E. Devaux, manager, engineering materials and metallurgy department, ERA, Cleve Road, Leatherhead, Surrey, KT22 7SA, Leatherhead 74151.

SERVICES  
Aid for the production manager

SPL INTERNATIONAL has set up a Manufacturers' Division at its St. James's Street, Nottingham, offices. It will aid manufacturing companies in the U.K. and overseas at production management level to bring greater efficiency to manufacturing operations through the application of data processing.

In addition to the familiar areas of raw materials and stock control, production costing and monitoring, and data processing, SPL will help to identify problem areas in production planning and control, will recommend and implement the most effective systems including, where necessary, both hardware and software, and will show how existing computer equipment can be used more effectively by extending its application into areas not generally covered.

Further from the company on 061 423 3600.

PROCESSING  
Laser makes its mark

TEOR's tungsten halogen lamp development and engineering unit at Enfield, evidently well pleased with its Ferranti MP400 carbon dioxide laser, has installed another. Application is in cutting quartz, a material that has largely superseded glass in high intensity lamps since it can withstand high temperatures. Previously it has been cut by nicking with a grindstone and then breaking, or cutting with diamond wheels. But the wheels are expensive and their thickness (1 mm) wastes the expensive quartz; in addition the cutting fluid contaminates the cut ends which then have to be carefully cleaned.

The laser gave the answer: being opaque to the 10.6 micron infra-red wavelength at a focused power of 400 to 500 watts, the quartz is quickly vapourised and a clean chip-free cut of about 1mm width is produced which needs no extra machining or cleaning. More from professional components department of Ferranti at Dunstable Avenue, Dundee DD2 3PN (0382 89321).

## INSTRUMENTS

### Measures air flow in ducts

CLAIMED to offer advantages over a number of other existing methods of air flow measurement in ducts is the "Flow-Grid" system developed by Air-Flow Developments and already supplied to the National Coal Board for underground measurements.

It consists of a length of circular section standard steel ducting containing vertically mounted tubes. Some of the tubes contain forward facing holes drilled at about three-quarters duct radius from the centre and these sense the upstream total pressure. Rear facing slots into tubes on either side of duct centre sense the throat static pressure. Tubes of the same kind are connected together.

The pressure differential between the two types of perforation as measured by a manometer connected across tapping points is accurately related to the flow of air through the duct and may be so calibrated.

Obviating the relatively low pressure of the pilot tube, the system also does not incur the large pressure losses caused by an orifice plate. Furthermore, location of the grid is not important, and it acts as a screen to smooth out flow irregularities, making measurements easier. More from Lancaster Road, High Wycombe, Bucks. (0494 25352).

Better than a buzzer

PUT on the market by ITC Components Group are two audible warning devices employing piezo-electric ceramic as the sound generating medium. Having no moving parts, the devices have a working life which is claimed to be 20 times longer than a conventional electromechanical bell or buzzer. One of the units works from 12 volts and has a long pulsed tone only, while the other requires 24 V and emits a continuous short-pulsed or long pulsed note. Each of the models takes only 10 mA from the supply and yields a sound output greater than 85 dB. Their diameter is 30mm, depth 36mm. Applications will be found in security, automation and control systems and in general instrumentation. More from ITC Components Services, 100, River Front, Enfield, Middlesex (01-363 7458).

Picking up very faint signals

DESIGNED to enhance measurements of low-level signals, a new Hewlett-Packard Model 10555A pre-amplifier increases sensitivity of instruments, such as scopes, counters and analyzers,

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London N4 3AF Telephone 01-253 3322

by more than 10 times. Minimum gain is 23 dB (24dB typical). It operates from a power supply of +15 volts at 40 milliamperes or with those Hewlett-Packard instruments with a probe power output.

Among the design points of the Model 10555A are its gain of 32 dB or greater from 2 kHz to 1300 MHz,  $\pm 1$  dB response, 50 ohm input and output impedances, fuse protection and reverse isolation of greater than 45 dB.

More from the company at King Street Lane, Wokingham, Wokingham, Berks RG11 5AR Wokingham 734774.

COMPONENTS  
Signetics has Dolby circuit

AVAILABLE FROM the Signetics I.C. Marketing Group, Mullard is a monolithic integrated circuit implementing the Dolby-B noise reduction system. Type NE45B, it is designed to reduce the level of hiss in many types of tape recordings and cassette recorders, and high fidelity radio receivers.

The B-type noise reduction system operates by boosting low level high frequency signals in the encode mode and attenuating the same signals in the decode mode. During the latter process, noise in the treated frequency range is also attenuated.

Three new 256 x 1 random access memories are the latest additions to the range of LOCOS integrated circuits available from Signetics. HEF4730 and 4730V are static RAMs with a stand-by power consumption of typically 5 mWatts. They are therefore particularly suitable for memory systems in battery-operated equipment. By using an individual battery on the pc board, it is possible to build non-volatile RAM systems which keep the information over a long period and allow storage of the complete pe load separate from the equipment to later use of the stored information.

HEF4730 has a supply voltage range from 3 to 15V and an access time at 5V of 55ns. The HE 4730V is an economy version to use with a supply voltage range limited to 3 to 10V. The HE 4730V/S1 is a speed select version available on request; access time is 40ns at 5V and 15ns at 10V. The units are available in the standard pin plastic or welded ceramic packages. Mullard House, Torrington Place, London WC1E 7HD. Tel. 01-663 6333.

### Simulates effectively

BECOMING AVAILABLE in this country is a fully integrated small scale hybrid computer system from Electronic Associates called Minihybrid.

Aimed at the educational, biomedical and smaller industrial markets, the computer is intended for the simulation of complex dynamic systems in real or fast time.

Basic system includes an EAI Datapacer digital processor with 16k of core memory and 133k of floppy disc, together with a parallel analogue processor, hybrid communications interface with 60 analogue/digital channels, and an ASR-33 teletype writer for digital input/output. The system can be easily expanded at any time after initial purchase to include an alphanumeric/graphic CRT terminal,

an x-y plotter and additional digital analogue and interface capacity. For simulation it is claimed that the machine can offer economies and operating speeds "just not available in the largest digital machines." More from Unit 33, Victoria Road, Burgess Hill, RH15 0JR (04446 5101).

More power for IBM's babies

EIGHT new models to the small, desk-sized, IBM System/32 and two main memory sizes for the IBM System/8 Model 15D central processor unit (CPU) have been announced by the General Systems Division of IBM United Kingdom.

New models of the System/32

offer a line printer operating at speeds of up to 285 lines per minute, twice the existing speed, and a bi-directional printer with a speed of up to 120 characters per second. When combined with the System/32's four existing disc storage capacities—3.2, 5.0, 9.1 and 13.7 million bytes—the two new printers create eight new models.

Two new main memory sizes, 96,000 and 128,000 characters (bytes) have been added to the main memory range of the IBM System/32 Model 15D CPU, the capacity of which now runs from 96,000 to 256,000 bytes.

Meanwhile, in Atlanta (U.S.), IBM has announced a 25 per cent cut in the purchase price for 115 General Systems Division key entry equipment. The products affected are the 029 card punch, the 129 card data recorder and the 3741 data station/programmable work station.

IBM U.K. says that it is not known if or when these cuts will operate in Britain. More on 01-935 6600.

Sealed disc drive by Memorex

MEMOREX has joined in the plug combat battle with an equivalent to the IBM 3350 disc storage system. This unit uses Winchester type technology that is the heads are sealed within the disc assembly, ensuring elimination of foreign matter and that the heads that write the data also read it.

Memorex is also offering a fixed head facility, as with the 3350.

The company's devices include the 3650, containing two data modules of 317.5 megabytes capacity, the 3653 containing two modules and the primary controller and the 3654 also with two modules and secondary controller, all the above having optional fixed head features. These devices attach either to the customers' installed integrated Storage Controller (ISC) of a model 145, 148, 158, 168 or alternatively, through a Memorex 3674 outboard controller. Memorex is at Hoechst House, 50 Salisbury Road, Hounslow, 01-870 7716.

## HANDLING

### Sliding doors clip in place

FOR INSULATED and dry freight side and end loading van bodies, Cravens Homalloy (Garstang) has introduced a sliding door system to meet EEC health regulations.

The doors are top hung and secured at the bottom with retaining clips which fold flush with the floor when not in use. This prevents the doors becoming jammed, as happens when conventional floor runners are damaged or blocked with debris. If the load moves and becomes wedged against the door in transit, the doors can be lifted clear of the obstruction, says the company which is at Joe Lane, Catterall, Garstang (0952 4211).

Containers filled fast

FOAMING or non-foaming liquids encountered in the food, paint and chemical industries can be dealt with by a twin head semi-automatic filling machine put on the market by Neumo. Up to eight 25 litre containers a minute, or 70 to 80 250ml ones, are typical filling rates, but the air-operated machines can top or bottom-fill volumes from

200ml to 200 litres to a guaranteed accuracy of  $\pm 0.25$  per cent.

The units incorporate twin, quick-strip positive displacement pumps and reciprocating air motors equipped with six-position turret controls to give instant change of the pre-set volumes dispensed. Initiating air signal causing all functions to occur can be by a single or twin foot or hand control.

Standard equipment includes combi-vented variable height to fill or automatic rise and fall bottom filling heads which are interchangeable and simply clamp into position. Quarry Road, Newhaven, East Sussex BN9 9DB (07912 4301).

METALWORKING  
Vacuum heat treatment for all

NEW LOW-COST vacuum furnaces by Vacuum Fusion Techniques of St. Ives, Cambridgeshire are intended for the large section which could, with advantage, employ vacuum heat treatments including brazing, sintering, etc., yet cannot justify the high cost of furnaces at present on the market.

Model 2025 is available in an entirely valveless system in conjunction with a special diffusion pump, eliminating much of the expensive logic and valves inherent in conventional furnaces. The company is at Tenders House, St. Ives. 0430 69439.

## PRINTING

### Watermark problem solver

DEMONSTRATIONS to the trade of a high speed watermark sheet cutter, designed, developed, and built by Strachan Henshaw sheet finishing division mark the culmination of 3 years' development in conjunction with leading security paper and watermark mills in the U.K., France and in Germany.

The new patented equipment is claimed not only to have overcome the drawbacks of existing machinery but to offer mills for the first time the facility of obtaining a complete installation direct from one manufacturer.

Strachan Henshaw is already a leading supplier of preprint register cutters used in the printing industry and has supplied these machines worldwide over the last 20 years. Particular problems on watermarks include mark to mark which involves the cutting system in making very rapid correction of the length at speeds of 200 cuts per minute.

The new system on demonstration in the Bristol factory is capable of correcting large discrepancies automatically and in fact monitors right up to the point of cut so that any changes necessary in the relationship of knife-speed to web can be made. The use of latest fibre optics, digital control and high impulse encoders gives a constant read

out of variation and the exceptionally simple operation results in very low wastage. The company is at Speedwell, Bristol BS5 7UZ. 0272 555291.

Bemrose to get mini

COMPUTER-BASED typesetting equipment incorporating a Digital Micro 18V minicomputer is to be supplied by Comprite to Bemrose and Sons, the Derby printers. With two visual display terminals for make-up purposes, the system has twin magnetic disc storage devices giving immediate access to ten million ens of stored text. For proofing purposes a line printer is to be supplied.

As well as being used for the correction of text, the VDUs will allow the operator to interact with the computer to produce and change made-up pages before the production of film output. Initially, output from the system will drive Bemrose's Linotype 505 Linsetter, but the system is compatible with other equipment.

Comprite has developed programs to meet the needs of book and general printers; these have been modified for Bemrose to allow such facilities as multi-column composition, the automatic inclusion of running heads and folios of different types, optional pagination by column, line numbering at specified intervals and several others. Comprite is at Boreham Mill, Bishopstrow, Warminster, Wilts (09852 2822).

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## LABOUR NEWS

### Work experience schemes for teenagers approved

CHRISTIAN TYLER, LABOUR STAFF

FIRST TWO "work experience" schemes under a plan launched yesterday employed teenagers have been approved by the Manpower Commission.

Others are ready to start between 1d and 18 will be started. Ultimately 30,000 people are expected to be in for a minimum six weeks of working life in offices or shops.

**DO need aid**

scheme, announced last by the Government after with the CBI and C. aims to help some of 1,000 young people who, said, may be unemployed by the end of the year.

first two projects are at agricultural division at Tain, Tees-side, and at the

Darlington Hall Trust, Devonshire.

ICI already runs a similar scheme of its own, and Mr. Peter Bayly, a former senior ICI manager, has been appointed to direct the programme.

Recruits will be paid a Government allowance of £16 a week, free of income tax and national insurance deductions. The Government expects the saving on unemployment and supplementary benefit to total about half the £16m. the scheme will cost.

Announcing details in London Mr. O'Brien said the commission was concerned over young people unemployed for a long time who might become "embittered with society and discontented with themselves."

But the commission will try to ensure that recruits are kept occupied enough not to become disenchanted by their six months' look at industry.

Projects will have to be vetted by employees and their trade unions, and employers required not to lessen their normal intake of trainees.



Mr. Jim Slater (in shirt-sleeves, centre), general secretary of the National Union of Seamen, flanked by colleagues at yesterday's start of pay negotiations with the General Council of British Shipping.

### Union seek 'cuts' talks

BY DAVID CHURCHILL, LABOUR STAFF

CIVIL Service union leaders decided yesterday to seek an early meeting with their new Minister, Mr. Fred Peart, who took over from Lord Shepherd in the recent Government reshuffle.

The unions are anxious to impress upon Mr. Peart the substantial reduction in services to the public over the next three years which will follow the manpower cuts. About 36,000 fewer jobs—saving about £35m.—will be the result of the cuts and this will mean, for example, fewer staff involved in dispensing social security benefits and checking for tax evasion.

At the meeting with Mr. Peart, which is expected to take place within the next two weeks, union leaders also will say that they want the Minister to maintain the Government's no compulsory redundancy pledge. Instead, any manpower savings should be achieved through natural wastage.

### Pay blitz catches one in four

MORE than one in four employers investigated during the first week of a blitz on low pay were found to be paying less than the statutory minimum set by Wages Councils.

From the seven towns in the first phase of the saturation investigations by the Department of Employment almost £10,000 in total was found to be owing to more than 200 of the 1,500 employees whose wages were examined.

### Wright makes final bid to remain engineers' leader

ALAN PIKE, LABOUR STAFF

G for full-time officials of unaffiliated Union of Engineering Workers closes next with the main interest rated on two second-round contests.

Bob Wright, defeated last first for the general secretaryship and then in an attempt to retain his executive making his final effort main within the union ship as an assistant secretary.

came second in the first of this contest in the with 68,727 votes compared with 52,084 for Mr. John, British Leyland consultant.

live other candidates now ated polled more than 3 votes between them, g this month's final stage when.

Wright, a Labour Party er, has broad Left support and is one of the union's most respected negotiators, with a particularly high reputation in the motor industry. Until his election defeats he was the natural Left-wing candidate to succeed Mr. Hugh Scanlon in the presidency.

If he loses again this month the Left will be without any obvious contender.

This month's series of elections will also decide whether Mr. Jimmy Reid, who was one of the organisers of the Upper Clyde work-in, will enter full-time union office.

A Communist Party member until this year, he topped the poll in the first ballot for Scottish organiser, in the spring, with 13,389 votes, and now faces a straight fight with Mr. Tom Donagan, who polled 8,622.

The results of the voting are expected to be declared early in November.

### Job tribunals 'not free sweepstake'

OUR LABOUR STAFF

KERS who regarded unfair dismissal claims at industrial tribunals as a "free sweepstake" expense of their employers, attacked by a barrister at Employment Appeals Tribunal yesterday.

Tribunal awarded costs to a widow, Mrs. Charn, of Sandwell, West Mid, who pursued her husband's claim for unfair dismissal his former employer's death.

Justice Bristow, chairman, that the company, Metal-ask of Oldbury, had agreed her costs order should not be made without leave of the court.

Bruce Reynolds, for the city, had asked for costs to be awarded in the wider of the Engineering Employers Federation.

said: "If employees think ase, however hopeless, can might without any sanction could be tantamount to say: 'Here's a sweepstake, you use and you don't have to your ticket'."

### Journalists' closed shop threatens freedom

OUR LABOUR STAFF

ARNING that single-union shop would create an "instable temptation" to ine editorial control and of newspapers was made day by Mr. Maurice Green, lent of the Institute of alists, on the opening day of annual conference in eld.

Green claimed that a union closed shop would in "one policy, one philosophy and one philosophy about the country." Every of opinion had shown that as wanted a genuine choice pers and magazines and a y of viewpoints.

do not want to choose y between different editions and."

### Speculators are buying it homes, says NUM

ULATORS HAVE been in to Coal Board housing s in the Kent coalfield the Board said that it sell its houses according National Union of Mine-ers.

targets have been ly and retired miners and widows who have no of obtaining a mortgage the Board offers them their s at half the market value.

speculators are offering the houses immediately the have bought them from a board. The tenant then gets all profit from the specula-who, says the union, will sell the house for enormous

Mr. Jock Dun, secretary of the union's Kent area, said yesterday: "This is a disgusting move by speculators and get-rich-quick boys." The union was warning all tenants to ignore the offers.

Meanwhile, the union at Betteshanger Colliery near Deal—the largest pit in Kent—is opposed to the sale of the Coal Board houses because the older tenants could not obtain mortgages.

Mr. Nick Richardson, union branch secretary, said that the sale of the houses would retard recruiting. Waiting time for a local Coal Board house now was less than 24 years, compared with more than four years for that of local authorities in the area.

### Vauxhall and unions to continue talks on lay-off pay deal

BY ROY ROGERS, LABOUR CORRESPONDENT

Vauxhall Motors and union representatives of its 21,000 manual workers are to continue discussions on improved lay off pay arrangements as part of their Phase Two pay settlement which comes into force today.

From today Vauxhall workers will benefit from 5 per cent. rises subject to the policy's £2.50 to £4 upper and lower limits.

They would normally have received their annual increase in May, but had to wait the necessary 12 months since their last main rise — part of an earlier sized agreement.

Other elements in this year's settlement include provision for up to four hours off with pay to attend pre-arranged hospital appointments or, in certain circumstances, to accompany wives, husbands or children on similar visits.

Union demands for full pay for workers made idle by external industrial disputes are to be the subject of further discussions next month.

The management has offered to improve lay-off pay from 70 per cent. of normal rates to 80 per cent., although so far this has proved unacceptable to the unions.

The bulk of Vauxhall production workers are on a basic rate of £56.80 a week with most

skilled men on £62.20 including total rises of between £9.80 and £11 a week from their three-stage deal concluded in 1974.

Leaders of Ford Motors' 56,000 manual workers, who enjoyed a broadly similar long term deal, meet later this week to draw up and lodge their claim.

Although they have not had to delay their claim to comply with the pay policy, they may have to offset any cost of living threshold payments—automatic 1 per cent. increases for each 1 per cent. in the Retail Price Index—which have triggered since the policy began in August.

Talks in head off a strike by 800 car delivery workers, which is threatening to close most of the car industry in Coventry, were continuing late last night in Birmingham.

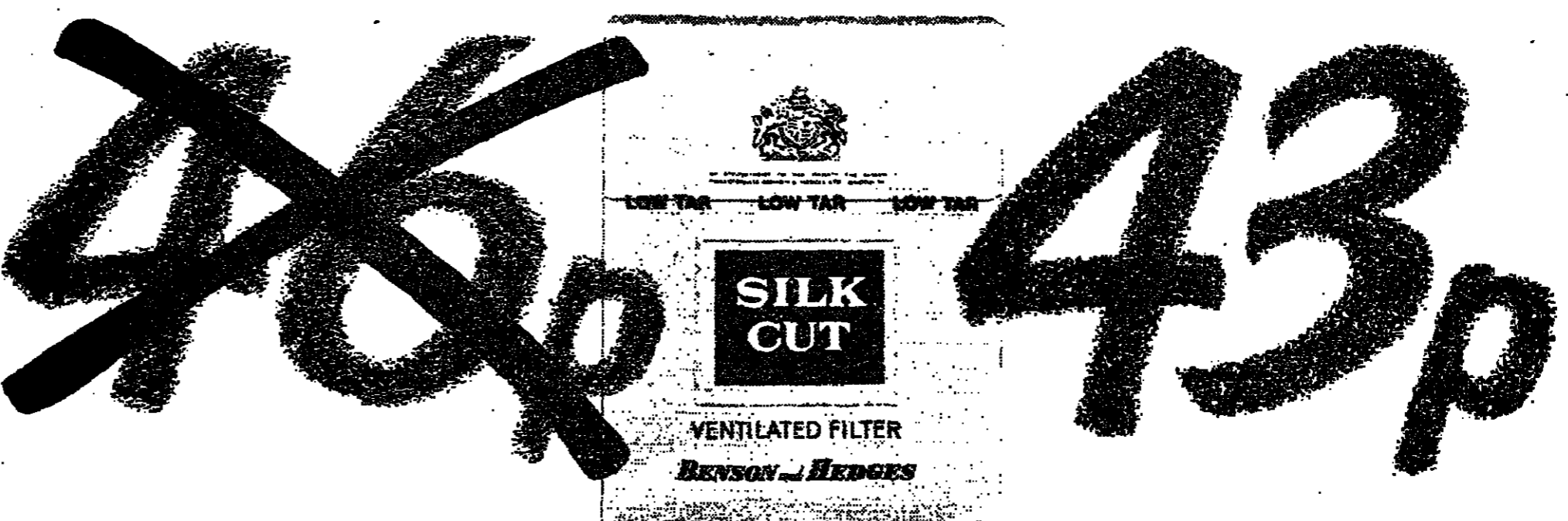
The meeting with shop stewards representing drivers at a dozen Silecock and Colling depots, officials of the Transport and General Workers Union, and the management was led by the Advisory Conciliation and Arbitration Service, which has tried unsuccessfully on three other occasions to find an acceptable formula.

The dispute, which started five weeks ago and now involves all 300 drivers in Coventry employed by four concerns, is over the redundancy of 17 drivers by Silecock and Colling.

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HOME NEWS

APV/HALL-THERMOTANK MERGER

# Strong partnership

BY GEOFFREY OWEN

AFTER THE experience of the last few years, when so many mergers have gone wrong, claims that a proposed takeover will lead to greater competitiveness and stronger overseas marketing are likely to be greeted with scepticism.

In the case of the agreed merger between APV and Hall-Thermotank, which was announced yesterday, the claim appears to be rather more solidly based.

There is a reasonable prospect that the deal will produce a stronger British presence in an important and growing part of the engineering industry.

APV, with a turnover of about £100m a year (three quarters of it outside the U.K.) and about 4,000 employees, is one of the leading U.K. manufacturers of process plant.

In recent years, it has sought to concentrate its efforts less on the "ironmongery" than on the processes (such as evaporation, distillation and humidification) which are relevant to the needs of its customers, particularly in the food and chemical industries.

It has sought, partly by acquiring other companies, to extend its range of processes and thus put itself in a better position to quote for turnkey projects overseas: it is clearly an advantage to offer a customer a package where all or nearly all of the key processes are under the supplier's direct control.

One gap in APV's range has been refrigeration, which is Hall-Thermotank's main business. It has, in fact, worked with Hall-Thermotank on several projects, but by bringing the company into the family, APV hopes to be able to present even more attractive proposals to its customers.

Some confirmation of the "industrial logic" behind the merger is provided by APV's strongest international competitor, Alfa Laval of Sweden.

This company's operations, like those of APV, have been increasingly oriented towards the development of complete processes and systems for the food and chemical industries.

To this end it acquired in 1973 Stal Refrigeration, another Swedish company which was majority-owned by ASEA, to fill an important gap in its range. APV has not followed this example.

The two companies complement each other overseas. APV has done especially well in the U.S., where Hall-Thermotank is weak. Hall-Thermotank has a stronger position in such markets as Black Africa and parts of the Middle East.

To a considerable extent the companies serve the same customers, particularly brewers, dairies and food manufacturers.

Hall-Thermotank, with a turnover of £53m, (about half out-

# Growth of economy slows abruptly in second quarter

BY MICHAEL BLANDEN

ECONOMIC GROWTH slowed abruptly in the second quarter after the recovery in the earlier part of the year.

The latest estimates for gross domestic product indicate that growth in the second quarter was probably less than half per cent. This figure, based on the best estimates available to the Central Statistical Office, is a significant downward revision of the initial figure published last month.

Confirmation of the slower growth rate provides statistical support for the strong recent indications that the economy has so far failed to take off at the rate which had been expected.

It will be regarded as disappointing by the Government, particularly against the background of the continuing rise in the level of unemployment.

More recent figures for industrial production in July have tended to confirm a slowdown in the rate of recovery, though interpretation of the statistics has been made difficult by erratic month-to-month movements.

These have been affected by changes in the incidence of holidays, while hot weather and the

# Rail chief orders fares policy review

A MAJOR review of rail fares policy is being undertaken at British Rail on the orders of Mr. Peter Parker, who took over as chairman last week.

It will be presented soon at a meeting of the Board to plan the level of next year's increases.

The review will place much emphasis on the effects of the fares freeze which began in May and continues until the end of the year, and on special cut-price promotions which have been operating this year.

Mr. Parker wants his executives to provide firm figures for passenger receipts and an indication of present trends in this field he will get his first good news since he took over from Sir Richard Marsh last week.

## More users

British Rail said yesterday: "The standstill, coupled with promotions, has led to extra business, and the trend is now picking up."

Mr. Parker was alarmed at the reaction to reports last week that there may have to be two fare increases next year. But the Board maintains that no decision on the timing of the increases, or the level, has been made.

It warned, however, that in London and the South-East fares would have to go up in real terms by about 7.5 per cent. each year from 1977 to 1981 to meet the Government's ruling that there must be no increase in the State grant to the railways.

On top of that, there would have to be increases due to inflation.

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David Callund

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# More homes turn to solid fuel

SALES OF domestic solid fuel fires and boilers have gone up by 10 per cent. since March in spite of the hot summer, a Cardiff conference of European fuel distributors was told yesterday.

Mr. Donald Davies, National Coal Board member for marketing and a former Coal Board area director in South Wales, said that the increase was on top of a 5 per cent. rise in the 12 months to March—a period in which the consumer durables market generally was depressed.

There was a swing back to solid fuel for home heating and a distinct trend among private householders towards installing appliances combining central heating from the living room fire and domestic hot water supply.

The solid fuel interests needed now to stay ahead by developing even more efficient and convenient boilers, heaters and fires, Mr. Davies continued. It would require an effort, pooling world-wide knowledge and experience, which had already begun.

In the industrial market, while coal had running cost advantage for space heating and some commercial processes, capital costs of plant tended to be higher than with other fuels.

## GROSS DOMESTIC PRODUCT AT FACTOR COST

	Based on expenditure data	Based on income data	Based on output data	Average estimate
1974	110.6	110.5	109.4	110.2
1975	109.1	107.8	107.1	108.0
1974 1st qtr.	107.6	104.0	107.3	106.3
2nd qtr.	111.5	111.1	109.9	110.8
3rd qtr.	112.5	113.4	111.0	112.3
4th qtr.	110.8	113.7	109.4	111.3
1975 1st qtr.	111.2	109.3	109.3	109.9
2nd qtr.	108.4	107.6	104.9	107.6
3rd qtr.	107.5	107.2	106.0	106.9
4th qtr.	109.4	107.1	106.3	107.6
1976 1st qtr.	111.7	107.5	107.8	109.0
2nd qtr.	108.4	108.0	108.0	108.1
1974 1st half	109.6	107.5	108.6	108.6
2nd half	111.6	113.5	110.2	111.8
1975 1st half	109.8	108.5	108.1	108.8
2nd half	108.4	107.1	106.2	107.2
1976 1st half	110.1	107.8	107.9	108.6

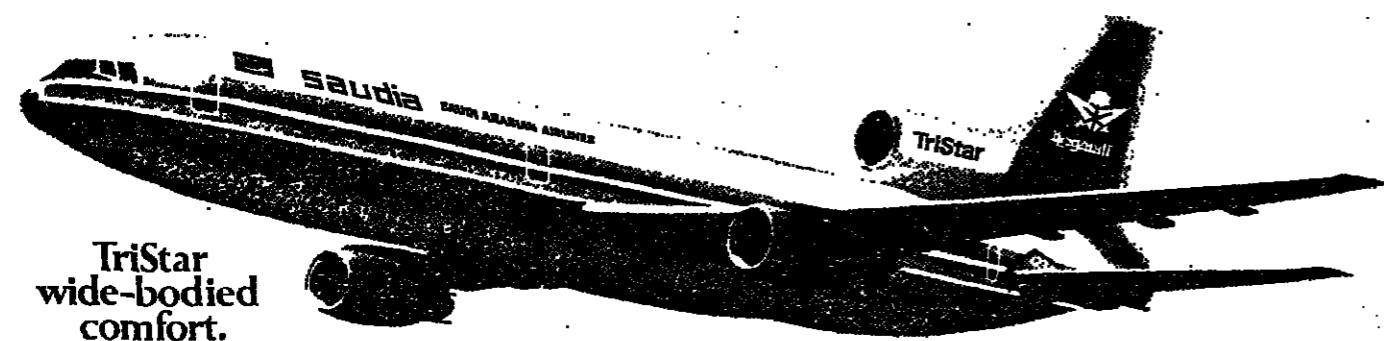
Source: Central Statistical Office

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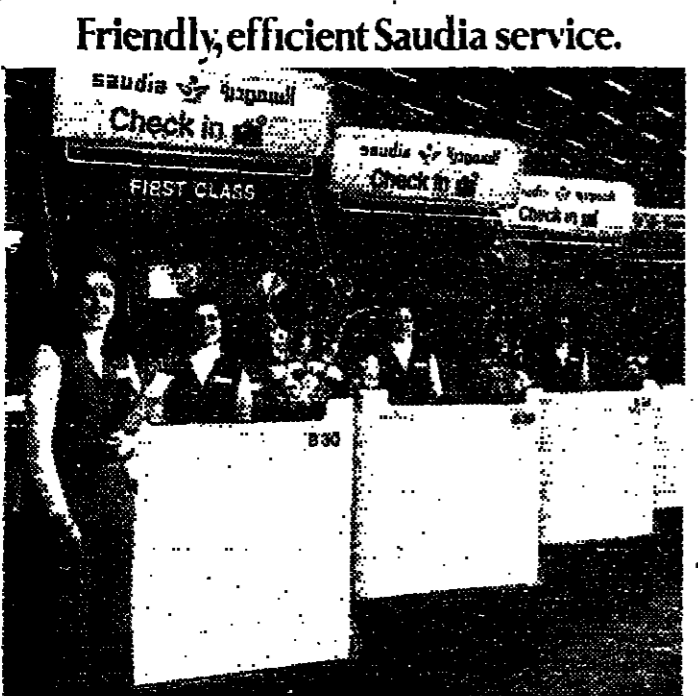
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FLIGHTS TO RIYADH	1101	1101	1101	1101	1101	1101	1101	1101
FLIGHTS TO DHAHRAH	1101	1101	1101	1101	1101	1101	1101	1101
FLIGHTS TO MEDINA	1101	1101	1101	1101	1101	1101	1101	1101
FLIGHTS TO TABUK	1101	1101	1101	1101	1101	1101	1101	1101
FLIGHTS TO BAHJA	1101	1101	1101	1101	1101	1101	1101	1101
FLIGHTS TO DUBAI	1101	1101	1101	1101	1101	1101	1101	1101
FLIGHTS TO AMMAN	1101	1101	1101	1101	1101	1101	1101	1101
FLIGHTS TO BAGDAD	1101	1101	1101	1101	1101	1101	1101	1101
FLIGHTS TO TEHRAN	1101	1101	1101	1101	1101	1101	1101	1101
FLIGHTS TO MOSCOW	1101	1101	1101	1101	1101	1101	1101	1101
FLIGHTS TO LONDON	1101	1101	1101	1101	1101	1101	1101	1101



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# 'Housing nightmare' blamed on profit

By Michael Cassell, Building Correspondent

HOUSING in Britain would remain "a nightmare" problem as long as it continued to be dictated by profit, according to a report released yesterday.

The report, published by the information and intelligence unit of the Government-sponsored Community Development Project, severely criticised nearly all the parties involved in the housing market.

The Project was set up in 1969 by the Home Office as a neighbourhood-based experiment "to find new ways of meeting the needs of people living in areas of high deprivation" and originally consisted of 12 local projects.

## Controversial

Recently, the Home Office said that the central information unit, which prepared yesterday's report, is to be closed. The controversial nature of some of its past and projected work is thought by some Project staff to be behind the decision.

The latest report, based on four years of research in three areas, says that providing homes is incidental to money-making.

According to the Project, the housing finance review would fail to solve the problems. Private profit would remain the aim.

Mr. Timothy Raison, chief Opposition spokesman on the Environment, said that he found the report "astonishing"—a slick Marxist tract on housing policy with no attempt at objectivity.

Profits Against Houses: an alternative guide to housing finance. CDP Information and Intelligence Unit, Mary Ward House, 5, Tavistock Place, London WC1H 9SS; 5sp.

# Co-operative housing to be pushed

VIGOROUS ADVOCACY and development of various forms of individual and social ownership and tenure is central to the Government's future urban and housing policy, Mr. Reg Ffrench, Minister for Housing, said at Enfield yesterday.

The forthcoming Green Paper on housing policy would have more to say about some of the Government ideas in that field.

Speaking at a ceremony to mark the start of the 6,000th house by the North British Housing Association, he said that much of the Housing Policy Review on which the Government was engaged was concerned with priorities in finance and resource use in order to improve housing conditions. But Government policy required a social or community dimension to housing.

There were about 12 co-operative housing associations operating successfully in various parts of the country and several more were being formed.

# Tomorrow promises a big leap for the small screen.

Television is the youngest and, arguably, the most powerful of the means of communication that serve society. It is also one that must adapt swiftly to technological change.

The Entertaining Electron is an unusual documentary. It offers an intriguing glimpse of television today and of the far-reaching changes to come, a preview of the electronic wizardry that may be commonplace reality tomorrow.

It has been produced for the ITV Network by HTV with the co-operation of other companies. It is based upon the Faraday Lecture with which the Director of Engineering for the Independent Broadcasting Authority, Mr. Howard Steele, and the Head of the Authority's Engineering Information Service, Dr. Boris Townsend, toured Britain in 1975/76.

It will be screened at 10.30 p.m. this evening, the 21st anniversary of the launching of the ITV service.



# The Management Page

## TRANSACTIONAL ANALYSIS

BY SUE CAMERON

# A theory of behaviour patterns

THE BRITISH are always deeply suspicious of any management or selling techniques—especially when presented in that peculiarly American mixture of jargon and slang which carries a closer resemblance to Orwell's Newspeak than to the Queen's English.

Yet transactional analysis, an American theory of behaviour that can be used to give individuals a greater insight into their business relationships, is now being adopted by a small out growing number of U.K. companies as part of their training programmes. And in spite of its origins it seems to be proving successful.

One of the first companies to show interest in it was Aer Lingus, which heard about it through its operations in North America and decided to buy a transactional analysis training package from one of the U.S. airlines. In the event the package proved totally unsuitable for use in Europe so Aer Lingus set about adapting it. Much of the argon was stripped out and eventually a two day audio visual training course was devised. This course now forms part of the training of all the airline's ground and air staff.

The Aer Lingus training package was so successful that the company decided to broaden and market it. One customer was C and A Modes which uses it in sales staff training and it has also been bought by the Post Office, the biggest employer in this country.

### Package

The Aer Lingus package (which costs £2,700) is not the only one available. Other companies using transactional analysis in one form or another include ICI and United Biscuits which has devised its own training courses. And this summer the Institute of Personnel Management published a report on the system called Transactional Analysis at Work.

The report, written by Keith Carby and Manab Thakur, outlines the basic theory of transactional analysis and details the experience of five British organisations that have used it. It also explains how the system was developed by Dr Eric Berne, a Californian psychiatrist and the author of the best selling book *Games People Play*.

The idea behind transactional analysis is that everyone has three "ego states". These are called parent, adult and child but the titles have little to do with age or chronology. All individuals are supposed to be able to move from one state to another. When people are in the parent ego state they act in a paternal way, either protective and caring or else authoritarian. The child state covers the emotional side of a person's nature while individuals in the adult state act in a purely rational manner.

The theory is that if someone can recognise the different ego states in others and then react appropriately, dealings with colleagues and customers become both pleasanter and more efficient.

For instance, a customer in an emotional or child state is likely to complain loud and long if asked to wait in a queue for even five minutes. This is not only uncomfortable for all concerned but is also time-wasting because a sale cannot be completed until the haranguing is over. And the situation becomes even worse if the salesman on the other side of the counter behaves in an emotional way himself and either shouts back or looks sullen.

But once the salesman realises what is going on he can control his own reactions and in addition can stop the customer in full flood by asking him a straightforward question that will force him to revert to his adult or rational ego state.

For instance, the salesman might ask which brand of goods the client wishes to be shown. And the customer will find it hard not to give a direct answer even if his manner is ungracious. As a result both parties can get on with the business in hand.

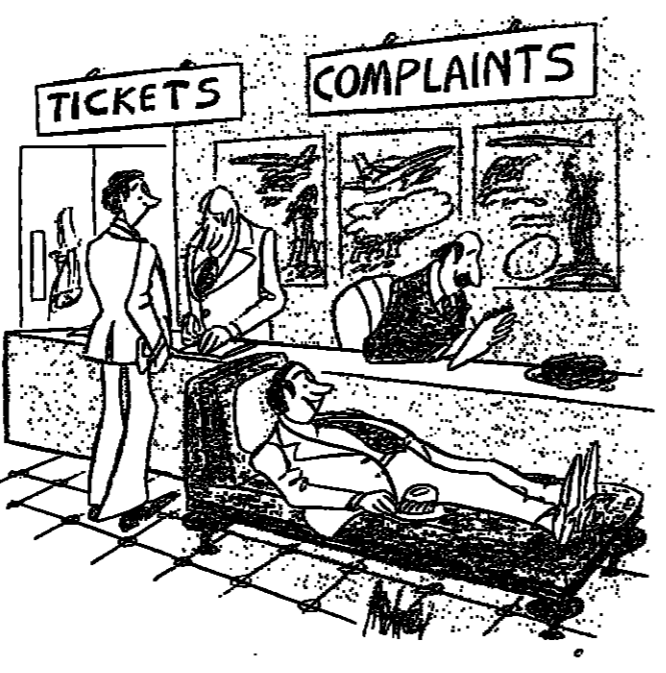
Psychological games, which people only play when in a child ego state, form an important part of transactional analysis. One example is the "why-don't-you-yes-but" game. A manager might ask a colleague how he can get his budget estimates out by the end of the week. He may be given a number of suggestions such as asking the boss for more time, asking a junior to help or doing the work at home.

But the manager will find some objection to every one of these possibilities simply because he does not really want a rational solution to his problem. He is feeling anxious and he therefore engineers a game which forces the other player to go into a parent ego state and to reassure and try to help him.

Games like these reinforce a person's image of himself and his attitude towards others. Managers who play the "why-don't-you-yes-but" game are likely to have a high opinion of those around them and a very low opinion of themselves. And in an almost masochistic way playing games proves to them that they were right all along in thinking they were inadequate and unable to cope.

People who feel they are superior to others also play games but of a different type. They might play the "now-I've-got-you-you-son-of-a-bitch" game which involves finding fault with colleagues or subordinates and berating them for it. Again, the game enables the player to reinforce his feeling of superiority. The trouble with games is that while they are being played no-one does any work. Games can also create a bad atmosphere in an office or factory and what is worse they can cost a company money. Someone playing the "now-I've-got-you-you-son-of-a-bitch" game may be so intent on scoring points off a colleague that he will allow an expensive mistake to go undetected rather than give up his game.

But if a course on transactional analysis is incorporated into a training programme employees can be taught to recognise the various games that people play at work. And once someone realises that a game is being played he is in a good position to stop it altogether or at least cut it short.



colleagues or subordinates and berating them for it. Again, the game enables the player to reinforce his feeling of superiority. The trouble with games is that while they are being played no-one does any work. Games can also create a bad atmosphere in an office or factory and what is worse they can cost a company money. Someone playing the "now-I've-got-you-you-son-of-a-bitch" game may be so intent on scoring points off a colleague that he will allow an expensive mistake to go undetected rather than give up his game.

Companies that use transactional analysis say that one of its biggest advantages is that the theory is easily grasped by people of varying ability. They claim it is also simple to use in dealings with others and they insist that it has led to an improvement in either customer relations or internal company relations—although the precise effect is almost impossible to measure.

On the other hand it does appear to be a useful tool in business life. Mr Alan Wakely, training manager for C and A Modes, says his company has found transactional analysis extremely helpful.

"We are a service industry and our staff need to know how to get on with other people and how to approach the job of selling. Basically it is a matter of being pleasant to customers but exhortations to be polite are not enough.

For even those who like selling and who are good at it often find it hard to know why customers act the way they do and why they themselves behave in a particular fashion. But transactional analysis helps train staff to think about themselves and to look at other people.

"We have taught this theory to 300 or 400 of our staff, starting with the more senior ones and though it is very hard to measure the results we believe it is proving effective. We are certainly going to continue with the present training programme."

Mr Tom O'Grady, who helped devise the Aer Lingus package, says airline staff continue to apply transactional analysis long after their brief training in the technique. He stresses that Aer Lingus leaves it up to individuals to decide whether or not they will use the approach but adds that most staff seem to find it useful and passengers also appear to approve.

Since its introduction the number of complaints Aer Lingus receives has decreased slightly and even when passengers are angry about the loss of their baggage—nearly all airline complaints concern baggage—they are now careful to exonerate individual staff members and compliment them on their helpfulness.

The authors of the IPM report on transactional analysis say none of the companies they looked at had consulted their unions before introducing it in training programmes. The general attitude was that if the unions were consulted they would not understand it and they would create quite a lot of fuss about it.

But the Post Office, which is hoping to teach transactional analysis to its counter staff, is working very closely with the unions on the question of bringing it in. The proposed introduction of the system is part of a plan to revamp the entire Post Office training programme.

Mr Alan Tiffin, assistant secretary of the Union of Post Office Workers, said his union always co-operated with the GPO over training schemes and it was interested in anything that would improve relations with the public. He himself favoured the use of transactional analysis and he thought it would provide substantial benefits for both counter staff and customers.

"Our members take no pleasure in having lengthy arguments with the public," he said. "To-day all communications with customers are more difficult, partly because of necessary innovations like the anti-bandit screens. It is harder to talk through the screens, people become bad tempered if they cannot hear and the days of 'Good morning, how are you?' have gone. Anything that will lead to smoother, pleasanter dealings is therefore well worth considering. And I'm quite sure our members would have no trouble in understanding the idea of transactional analysis and in putting it into practice."

ICI was attracted to transactional analysis partly because of its simplicity and the company has used it with some success in training programmes for managers and supervisors. The IPM report also agrees that the simplicity of the technique is one of its main assets but it points out that transactional analysis training schemes really need to be carefully tailored to suit the needs of each individual organisation. But it adds that the Americanness of the theory still seems to be a barrier to its widespread use in Britain.

At Cranfield management college the opportunity is offered to test entrepreneurial ability

School for ventures

BY NICHOLAS LESLIE

THE RECENT arrival on Britain's shores of Colorado beetles may threaten many a farmer's potato crop, but for John Schofield it is the sort of event which could provide a leg-up in what he expects will be his next venture—aerial crop spraying.

Formation of a company to provide such a service is still some months away. But virtually all the groundwork has been done and he has at least had the advantage of having been able to present his plans to a group of bankers, some of whom have expressed interest in providing financial backing.

For Mr Schofield to have progressed so far in less than a year has been possible as a result of an MBA course available at Cranfield School of Management. An integral, though optional, part of this course is an "Entrepreneurship and new ventures" section which is designed to assess an individual's ability to launch a business, and it is in this section that Mr Schofield has just emerged ahead of all others this year.

It is not merely a theoretical exercise. Anybody who completes this section of the MBA course should have developed his or her idea right up to the point where the business could be launched immediately upon the necessary finance being obtained.

The entrepreneurship section takes place in the second six months of Cranfield's year-long MBA course and accounts for 45 hours of a programme covering 180 hours. The first six months are taken up with a "core" course which everybody takes part in and which embraces all aspects of marketing, finance and other business subjects such as personnel management.

Before anyone can embark on the entrepreneurship course, however, he must submit his idea to a selection panel at Cranfield and it is at this point that a considerable number of proposals are "weeded out." According to Professor Richard Bruce, who until recently ran the course, people's motivations vary. For example, some are convinced that they are entrepreneur material and latch on to the course to get themselves launched into a business; others are not so sure and use Cranfield as a means of testing themselves.

Idea which were accepted for the MBA course that has just ended were diverse, ranging from book wholesaling, a vehicle maintenance credit card and an MBA recruitment service to an anti-smoking device, a horse race betting system and a de-ionised water device.

At the preliminary evaluation stage, projects accepted receive up to a maximum of 20 per cent. of the total points they can achieve for the entire entrepreneurship section. There then follow interim and final evaluations—each providing a maximum of 20 per cent. of points—and up to another fifth of available points are then allotted for "course participation." This is judged on the manner in which, for example, the individuals have shown initiative in making best use of all the resources available at Cranfield itself.

The final fifth of available points are allotted by bankers, who come from such companies as National Westminster, Lloyds, Barclays, Midland Montagu Industrial Finance, small business capital fund and Commercial Finance Corporation, and who assess both the viability of a project and its potential as presented by its sponsor.

It is clear that those cut out to be entrepreneurs show through on the course fairly quickly. While many of the projects are sponsored initially by a small group of people, it often happens that one person will subsequently emerge as the entrepreneur. Equally, some groups split up when two or more entrepreneurial types find themselves unable to accept the other's leadership.

John Schofield falls into the latter category and parted company with his initial partner. Nonetheless, he apparently showed an ability to use the services and knowledge of others to prepare his project.

His route to Cranfield embraced an early career in the merchant navy, stints in journalism and public relations and then several months farming. It was the latter occupation, coupled with an interest in flying—he has had a private pilot's licence since 1971—that led him to the idea of aerial crop spraying.

His choice of Cranfield was deliberate. Although he was keen to get an MBA, it is clear that a prime objective was to use the entrepreneurship and new ventures section as a launching pad. And although he sold virtually everything to fund himself through the course he eventually got a two-year TIPS—Training Opportunities Scheme—grant.

The project he put together embraced details of the history of aerial crop spraying, the potential for it in the U.K., the number and strength of other companies in the field, the type of aircraft suitable for the job, together with a detailed financial analysis of the funds required to launch the venture and the cash flow pattern necessary to take it through its first two years. He also provided details of verbal commitments from potential customers and an assessment of how much of that could be definitely relied on in the event of his going into business.

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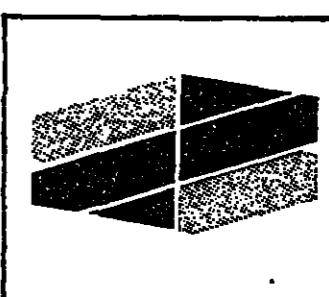


## FINANCIAL TIMES SURVEY

Wednesday September 22 1976

## Machine Tools

Few industries can have received the close attention which the machine tools sector has been given over the last 12 months. It is now starting to recover from the worst recession it has known.

HARTLE  
Machinery International LtdNOW FOR INDUSTRIAL  
EXPANSION

Modern British management realises that if it is to maintain a position with other leading industrial countries, it is imperative that factories are maintained with up-to-date machinery. Consequent to the past two years depression within industry, the updating of our factories with machine tools is now required, if we are to keep ahead.

Far seeing managers have already made their decisions for the purchase of replacement and additional equipment and are in the process of implementing those decisions. Other managers will have no alternative but to follow suit, or be left by the wayside. Traditionally, the British have not been left by the wayside, and I do not anticipate that now we shall be left behind. That is why I anticipate industrial expansion to a considerable extent in the immediate future.

## The Hartle Group

Alexander Machinery (Mile) Ltd.

Specialists in both powered hack-saws, bandsaws, Alexander Machinery Ltd and the Hartle Group in 1971 to form nucleus of one of the most successful manufacturing divisions in the world. Addition to the renowned 'Rapidor' 'Midsaw' horizontal and vertical saws, the company also produce the 'Tol' range of hydraulic presses and well-known Hydus range of saws.

## worthwhile Machine Tools

added to the Hartle Group. The Machine Tools complement turning division with a series of matic chucking lathes and the multi-Vertomat rotary transfer machines. They also manufacture a comprehensive range of drilling and tapping machines.

## advent Machine Tools Ltd.

founder member of the Hartle Group's turning division. Broadbent Machine Tools manufacture an outstanding series of long bed lathes with re-diverses up to 10ft, and swing sizes up to 2100mm. Their hollow die models, known as the 'Oil City' lathes are designed for oil and exploration drill tube machining and able to handle workpieces up to 15 bore.

## ley Machine Tool Company

Halifax. Joining members of the Hartle Group in 1971, Stanley Machine Tools added deep hole boring and smaller bore saw spindle lathes to the wide range of production and toolroom models. They imported by the distribution division and the automatic lathes now manufactured within the group. The 'hole' boring units handle depths of 100 inches from 0.8 to 2.4 inches diameter.

## alters &amp; Smith Brothers

Barnsley. The firm of Barnsley have made the Group's saving division the largest manufacturer of powered saws in Europe. A comprehensive range of powered saws and hand tools complement the division's products and their range of oil and column drills is enhanced by distribution division's imported units.

## rtle-Stedall Ltd.

Manchester. Only non-manufacturing member of Hartle Group, Hartle-Stedall are responsible for the distribution of a wide range of imported turning, drilling, and cutting equipment together with a substantial turnover of high quality used machine tools. The company maintain depots in the U.K. and are main agents for Soviet, Italian, Russian and Nigerian machine tools.

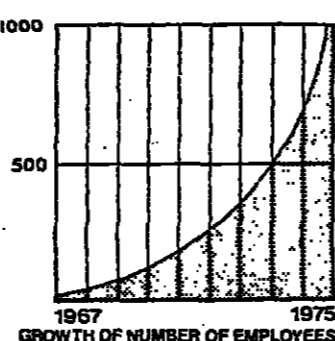
In addition an extensive range of presses, cranes, guillotines, and Digipower Forging Hammers (max. capacity 2,000 K.P.) are available through staff of Birmingham.



"Since its formation, this group has a record of dynamic growth both in the U.K. and Europe" Derek Hartle, J.P., Chairman.

## Increased work force

The consistent upward curve of the graph clearly illustrates the increase in the number of people employed within the Hartle Machinery International Group of Companies during the period between 1967 and 1975. This gives a clear indication of the many opportunities for both technical and commercial personnel constantly occurring as the Hartle Group continues expanding and indicates their acceptance of social responsibilities.

There's money on tap  
to keep production flowing

Hartle Machinery International assure industry that now is the time to re-equip and modernise by taking advantage of bank borrowing, hire purchase and leasing schemes.

Inflation, cash flow problems and economic recession can all be different symptoms of the same thing - lack of confidence. And the only lasting cure for that is commercial expertise and greater professionalism.

Every production engineer is expected to know manufacturing inside out, but real expertise is also dependent upon an understanding of the way his company attracts and uses resources to generate profits. In any business, success depends on the ability to manage the use of finance in the most effective and efficient way - to increase output, to reduce costs, to achieve higher sales, to improve profit margins or to deploy capital resources more economically.

Regrettably, the value of capital equipment per worker is lower in the U.K. than for any of our overseas competitors. The need for new plant and machinery is clear. And yet businessmen in all sectors of industry are faced with a major investment dilemma. Every large cash outlay appears either to dilute reserves of capital or divert long-term investments.

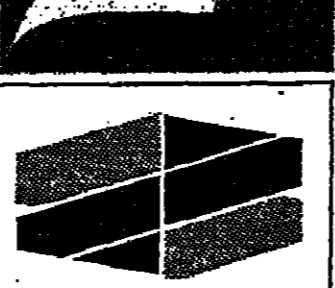
Credit finance is now recognised as a vital element in everyday business management because it solves this dilemma. Leasing and hire purchase protect both cash flow and increased profit earnings. Discounts, grants, part-exchange allowances and entitlement to tax reliefs are all safeguarded. Indeed, even the largest international companies prefer to use credit finance rather than deplete their capital resources unnecessarily by purchasing outright. By this method new machines pay for themselves out of the extra profits they generate and, most important of all, it enables companies to acquire machine tools that would not

usually fall outside the scope of their capital budget. With prices rising steadily, to delay purchasing new equipment until cash is available is as outdated as harvesting by hand. In contrast, the repayments made by the customer become progressively cheaper in real terms as they become eroded by inflation. Hartle Machinery International have become increasingly aware of the need to concern itself with contributing to its customer's success and not just offering a good product. Being an order-taker is not enough in harsh economic conditions. In conjunction with the Industrial Bank of Scotland Ltd, a member of the Bank of Scotland Group, they have developed a special Finance Complement Service for its machine tool customers. When British industry begins to take full advantage of this kind of professionalism and expertise it will undertake the vital re-equipment programme which is needed to turn economic recession into recovery.

This is a shortened version of an article published in *Metalworking Production*.

## Our new symbol

Our new symbol in the group colours of blue and gold will be used for the first time on MACH 76 publicity material. The device will ultimately appear on all sales literature, advertising, stationery, and outdoor signs of group member companies.

FIFTY MACHINES ON SHOW  
AT MACH 76

see them on  
STAND 5.107/5.133

Hartle Machinery International, described by Chairman Derek Hartle as the best co-ordinated machine tool manufacturing and distributing operation in the U.K., has fifty products on show at the great International Machine Tool Exhibition MACH 76 staged at Britain's splendid new National Exhibition Centre at Birmingham, from 22nd September to 2nd October.

Stand 5.107/5.133 will show machines both manufactured in the group and from overseas for turning, boring, grinding, drilling, sawing and sheet-metalworking operations.

Manufactured within the group, the Broadbent 'Oil Country' lathe with automatic cycle screwing is especially suitable for the machining of oil exploration equipment, combining large capacity hollow spindle, long bed and more than ample cutting power.

Stanley will introduce their new range of large bore hollow spindle lathes and their renowned auto cycle deep hole boring and drilling machine with increased capacity to 100mm.

Also in the turning and boring section is the model 1512 vertical boring and turning mill produced in the Soviet Union by the manufacturer of the world's largest boring mills exported by V.O. Stankomimport Moscow.

On display and identified as model 16K30 F.306.N.C. is a new lathe fitted with A.S.E.A. Swedish numerical control.

The stand will carry a representative selection of grinders available from the Distribution Division. This covers universal cylindrical, plain cylindrical, centreless and surface grinders, capable of handling most grinding applications.

As well as being main U.K. distributor for V.O. Stankomimport of Moscow, Hartle-Stedall are also main distributor for Technoimport of Hungary.

Their radial drill range includes a model with a capacity of 100mm in steel, in addition to 50 and 75mm units.

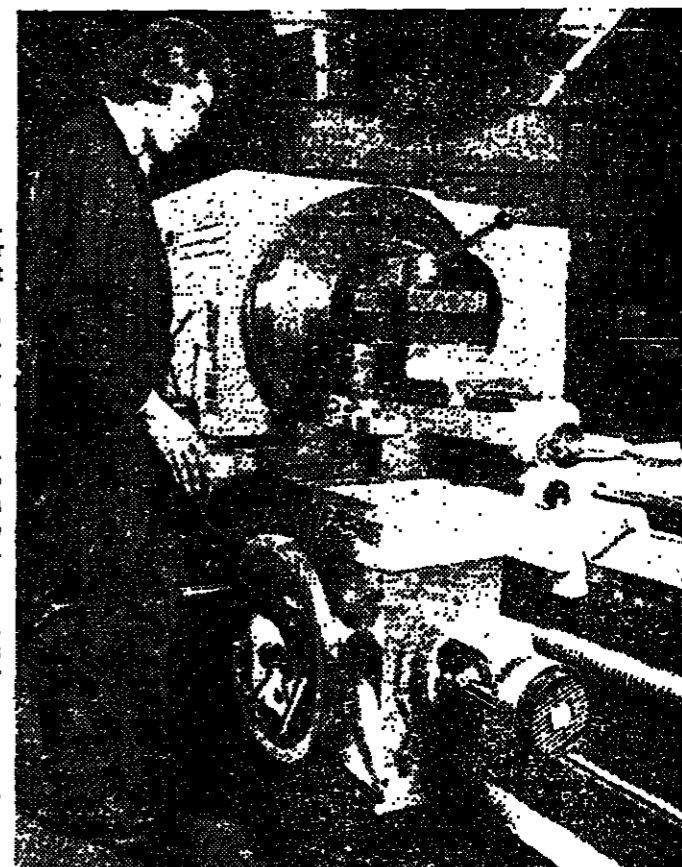
The Quallers and Smith range of drills include radials, bench, pillar and box column precision drilling machines.

Vertomat rotary transfer machines from Ackworth are available for first or secondary machining, including turning, drilling, reaming, counter-sinking, reaming, facing, slotting and light milling.

The combined manufacturing resources of Quallers and Smith and Alexander—both Group members—produce the widest range of hack-saws, bandsaws and power saws in Europe and probably the biggest sales volume.

For MACH 76 they are showing the QSH6 and QSH8 heavy duty hack-saws, incorporating two-speed drive and variable hydraulic feed and relief mechanism.

New from Alexander is the T315 high production heavy-duty power saw, with automatic bar feed and a number of other features such as a centre cut vice for burr-free cutting, outstanding performance with 1½in. wide B1 metal or HSS bandsaw blades and bar feed index length



This is the top-selling 'Oil Country' lathe from Broadbent Machine Tools Ltd., one of a range of high capacity centre lathes. It combines large hollow spindle capacities and bed length to suit individual requirements - plus more than ample cutting power, making it particularly useful for the machining of A.P.I. pipe line joints and other processing equipment allied to the petro-chemical industries.

Hartle Machinery International  
The real choice.

When you choose Hartle Machinery International for your machine tools you know you're going to get exactly what you want. One reason for this is that we are one of Europe's leading suppliers of machine tools with seven manufacturing companies and a distribution division with ten European showrooms. This means that we can offer you a real choice. We supply machines from the world's leading manufacturers. Vertical boring and turning mills, radial drills, surface grinders, tool and cutter grinders and of course lathes of all sizes and types, and are Europe's largest manufacturer of metal sawing machines. Our range includes the latest and finest machines from Britain, the Soviet Union and Eastern Europe - now among the quality leaders in machine tools, and certainly offering unbeatable value for money. Hartle Machinery International score in another big way. We can deliver most machines within a week or two of receiving your order. But it's not just products we bring you. It's expertise. Every machine is backed by our skilled technical service and thoroughly checked and tested before delivery to you.

## Hartle Machinery International Ltd.

Bank House, Chancery Street, Manchester, M1 4ET  
Manufacturing Division: Ackworth Machine Tools Ltd, Knotsley; Alexander Machinery (Barnsley) Ltd, Barnsley; Broadbent Machine Tools Ltd, Halifax; Quallers & Smith Bros. Ltd, Barnsley; Stanley Machine Tool Co. Ltd, Halifax; Distribution Division: Hartle-Stedall Ltd, Manchester

## MACHINE TOOLS II

# Keeping the Government on its toes

THE MACHINE tool sector has been selected as one of the 36 key industries to be examined by the National Economic Development Office as part of the Government's new industrial strategy which aims to switch more of the country's available resources to manufacturing.

It has been offered Government financial help via an industry aid scheme in which £20m. of relatively cheap money has been allocated to help manufacturers to get their plants modernised and more efficient as well as to encourage the faster introduction of machines incorporating new technology.

It has been one of the first industries which the National Enterprise Board has tried to help out in its merchant banking role. The NEB is providing cash at commercial interest rates but with deferred payment terms to help companies stockpile machines until the recession finally recedes.

You might say that all this is very flattering for an industry which is comparatively small—250 companies with 63,000 employees and a turnover of about £380m. If you take component manufacturers into the total, it justifies the view of the industry put forward by the Machine Tool Trades Association which recently informed a Parliamentary Committee that:

"The machine tool industry in the U.K., though small in manpower or turnover, is agreed by all to be an important if not vital part of the mechanical engineering sector, which itself is the main wealth-producing sector of British industry. The importance of the strategic and economic roles of the machine tool industry cannot be overstated."

The problem for the industry, however, is that its importance to the economy makes the government edgy at any time something goes wrong. Consequently attention is constantly focused on the troubles and failures in the industry rather than on the many success stories.

So it comes as a great surprise to many people to hear someone like Mr. Anthony Frodsham, an "outsider" who came to know the machine tool business when he was appointed chairman of the Machine Tool Economic Development Committee three years ago, say "It is a very good and very successful industry which exports well and has a reputation for first-class

design. For many companies it is a good industry to be in."

The industry as a whole, he believes, "has been affected by the adverse publicity given to one or two large companies."

And it is quite true that for some people Alfred Herbert is representative of the U.K. machine tool business in general. The much-publicised problems of this particular group have tarnished the "image" of the industry at large.

Fortunately things are changing rapidly at Herbert and at the other companies which once made up the machine tool industry flight of lame ducks.

## Efficient

Herbert now has the financial resources, the tough and efficient management team and determined and co-operative workforce it has long needed. Admittedly, it required a Government rescue operation to put Herbert into that condition. But now the company could be in the black once more by the end of the year, given a reasonable flow of orders.

Also in the past year, Kearney and Trecker Marwin, considered by many to be the key British-owned business at the high-technology end of the industry, had its future satisfactorily resolved when it came under the wing of the Vickers engineering group. Once again, the prospects are for a fairly swift return to profit-making and, in the longer term, a reasonable return on capital.

With Staveley Industries, once in dire straits, sorted out some time ago by a new management team, the critics are going to have a hard time in future to find one outstanding "problem" company to quote as an example to justify any condemnation of the industry in general.

That is not to say that the industry is without problems. The machine tool EDC, "the Little Noddy," found quite a few when carrying out its part of the initial stages of the industrial strategy exercise. It should be emphasised again, however, that the objective was to search out the problems and that a recital of what was discovered quite naturally gives a one-sided and depressing picture of the industry. It was not part of the Little Noddy's job to list the industry's virtues.

The EDC found that real levels of machine tool demand and production in the U.K. fell during the past decade although world output rose. In terms of U.S. dollars world output has

been rising at an average of about 11 per cent. a year whereas U.K. output has risen only 2.5 per cent.

From 1966 to 1971 the U.K. industry held a 7 or 8 per cent. share of world exports; this fell to 5 per cent. in 1974 and 6 per cent. in 1975. Import penetration in the domestic market has increased from 25-30 per cent. in the late 1960s to well over 40 per cent. now, but this has been accompanied by a similar increase in exports from home production and a favourable trade balance has been maintained.

In the 1960s the industry invested a higher proportion of value added and larger amounts per employee than the average for mechanical engineering as a whole. In the early 1970s this situation has been reversed.

Employment in the industry reached almost 90,000 between 1965 and 1970 but fell sharply in the 1971 recession to reach 65,000 in 1973, 68,000 in 1975 and 63,000 in January this year. Profitability has been poor in comparison with mechanical engineering or with other sectors of the economy. Because of the low level of activity in this current recession, companies have few immediate cash problems. This will crop up again when activity has to be stepped up.

The Little Noddy indicated four types of constraints which might limit the industry's response to the expected demand upturn—expected, that is, next year with a peak in 1977-78. These were: (a) limited plant capacity in the industry itself; (b) manpower shortages; (c) supplies of raw materials or components and (d) finance.

It was pointed out that the industry could probably respond to a rise of about 70 per cent. in its order input rate before meeting major capacity problems. However, at the last demand peak—in 1973 and early 1974—order input was 130 per cent. above the present level.

The EDC insisted that the demand cycle, which saps the strength and confidence of the industry during a recession and leaves it weak to meet the following upturn, constitutes the most serious constraint on the industry's performance.

Many other problems are linked with this. Such as the lack of funds for capital investment and working capital which limits the industry's ability to strengthen itself by re-equipping and to take full advantage of cyclical upturns in demand for its products.

Or the fact that research and

development expenditure has fallen by a disturbing amount—in 1972 the industry spent only one-fifth, in real terms, of its 1966 expenditure.

Linked with this is the fact that the product types in which the U.K. industry is most competitive are often those for which demand has been declining, or growing only slowly. In the faster growing types the U.K. appears to be less competitive.

Foremost among the Little Noddy's recommendations for action on these problems was a suggestion that the Government hurry ahead with counter-cyclical measures. The EDC would like to see the introduction of an investment reserve scheme which would encourage manufacturing industry to invest during the recessions and discourage them from buying capital equipment during peaks in demand.

Such a scheme would only reduce—not eliminate—cyclical fluctuations and therefore it is

suggested that stockbuilding on the lines of the previously-mentioned National Enterprise Board scheme should be considered in future recessions.

The EDC called for closer relationships between the banks and machine tool company managements. Banks and other financial institutions should reconsider their criteria for assessment of medium and long term loan applications from manufacturing companies, it suggested. In particular, higher gearing ratios might be accepted and greater weight given to assessment of future prospects than of past performance.

## Opportunities

The banks should also appreciate the industry's special fluctuating need for working capital to take advantage of cyclical profit opportunities.

The Little Noddy said that machine tool managements should place greater emphasis

on world-wide market research for existing products and for potential new ones. As the U.K. industry has been forced to contract so rapidly in the last six years, there may now be market sectors which are no longer adequately supplied by U.K. manufacturers and such gaps might provide opportunities for the industry to rebuild its strength—either by developing suitable products or by taking licences for foreign designs.

It was pointed out that improvements to the industry's image held by domestic customers are needed in the fields of detail design, quality, delivery and service. Manufacturers need to re-examine their performance in these areas and take steps to rectify weaknesses and to publicise their strengths.

The industry must concentrate on products which incorporate a substantial degree of technology in their design or manufacture, insisted the EDC. These products will have a high value in relation to their raw

material content and can be expected to become increasingly important as user industries improve their own manufacturing processes.

And a higher level of investment is needed in numerically controlled and other types of machines which can improve the machine tool industry's own production efficiency and flexibility as well as meeting the higher precision requirements associated with higher value products.

Existing equipment can also be made better use of through greater production engineering and quality control effort, through improved production control procedures and by designing products for ease of manufacture.

In this connection, the Little Noddy, which includes trade union representatives, recognised that if potential productivity gains from new investment in production equipment are to be fully realised, careful collaboration between management and unions will be needed

to gain acceptance of change in manning levels and skill required. Unions will need to take a positive role in overcoming natural resistance to change among their members.

That is why the Government is insisting that the message from these industrial strategy preliminary exercises are taken right out to the shop floor, because there is as much to be achieved there as in the Boardroom.

The idea is that sectors like the machine tool industry should recognise their problems at that the solutions should come from within the industry rather than there be any attempt to impose them from above—some kind of "national economic plan." By this time next year we will have a better indication of whether this approach will work. If it does, it could be the U.K. machine tool industry strengthening itself considerably in the longer term.

Kenneth Goodin

## Two important changes in the industry's structure

SINCE THE 1960s when the urge to merge became a fever throughout U.K. industry—a phenomenon which did not leave the machine tool industry untouched—the structure of this particular sector has remained pretty stable. There were, however, two significant happenings in the past few months, but just how significant only time will tell.

The most recent of these was when the giant Vickers combine (sales £335m., taxable profits £25m.) moved into the machine tool industry via the acquisition of a majority stake in Kearney and Trecker Marwin. KTM is second only to the U.S.-owned Cincinnati Milacron as a maker of numerically controlled machine tools and is this country's biggest supplier of special machines. Probably 40 per cent. of the "specials" used in the British motor industry to make crankshafts, cylinder blocks and cylinder heads were

provided by KTM. It should therefore have a vital role to play in the investment programme of Leyland's bus and truck division.

On top of that, KTM exports about half its turnover—in the region of £13m. last year—and is generally thought of as providing Britain with its most important foothold in the high technology part of the machine tool business.

So it is easy to understand why the Government was so interested in saving the company after it accumulated losses of £6.8m. and ran out of capital. But the method of saving KTM "for the nation" is perhaps not so easy to comprehend. Why not, as with Alfred Herbert, simply steer the company in the direction of the National Enterprise Board? The answer is simply that the Government and the NEB can certainly provide cash. But they cannot supply management resources. And what KTM required was people to strengthen its management team as well as an injection of new money.

Vickers has both cash and management to contribute. KTM also benefits from the technology provided by its now minority shareholder, Kearney and Trecker Corporation of the U.S.

The Government, or the Department of Industry to be more precise, was so impressed by this combination that it was willing to write off nearly £5m. already invested in KTM and to inject a further £1.9m. of badly-needed working capital.

So, when the 1,200 KTM employees returned to work at the Brighton factory after the summer holiday break last month, they found themselves "under new management."

We know more than usual about this particular Vickers venture thanks to a week-long court case which preceded the final takeover and which took place because one of the previous KTM shareholders objected to the terms offered. It became clear at the hearing that the top management at Vickers was by no means enthusiastic about getting involved with KTM.

But now the deed is done the obvious question is whether Vickers might increase its interest in the machine tool sector. After all, Vickers will have a great deal of cash to spend after its shipbuilding and aircraft operations are nationalised.

## Indications

The indications are that Vickers would have shown no interest at all in KTM if it had not been involved in at least highish technology. There seems to be no chance that Vickers would want to acquire any old machine tool businesses. However it could well be interested in ones where the cash required, the technology involved, the risks and the rewards were all very high.

In the meantime, KTM is back in the "black" and is celebrating the successful launch of a completely new computer controlled machining centre.

The other important change in the industry's structure during the past year was the formal takeover of the aforementioned Alfred Herbert by the National Enterprise Board. Although this was a solution to the group's problems that not everyone in the industry heartily approved, the industry did breathe a sigh of relief that

this company—so well known and respected throughout the world—had at last escaped the threat of total extinction.

It is generally agreed among its competitors that Herbert, with Mr. John Buckley as chairman and Mr. Walter Lees as managing director, now has one of the strongest management teams in the business.

And, despite the recession, Herbert achieved markedly better financial results in the first half of this year, cutting the loss after tax from £2.5m. to £1.28m. on turnover up from £20.4m. to £23.7m. Given a reasonable flow of orders the company should be making profits by the end of 1976.

It cost the Government £25m. to save Herbert and, while most people seem to agree it was necessary for Britain to have KTM, not everyone believes that the money was well-spent as far as Herbert was concerned.

## Victims

With Herbert among its interests, the NEB will almost certainly consider further expansion into the machine tool sector. This is not a prospect which seems to please the managements of the private-sector companies and has certainly contributed to the comparative failure of the Government's industry aid scheme and the NEB's funds for stockbuilding project.

Machine tool people are apprehensive of taking any State cash in case they become what they would call "victims" of Sir Don Ryder's expansionist plans.

As it happens, the industry does seem to have come through the worse recession in living memory without serious casualties. There are no signs that any company has got into such bad difficulties that it must turn to the Government for help, a move which would almost certainly lead to it being steered towards the NEB's parlour.

There seems to be no other reason why the NEB should get more deeply involved in the industry. As the recent NEDC industrial strategy paper made clear, "scope for mergers in the industry is not thought to be great." But one sector—gear production machines—was identified and others such as presses and certain types of grinding machine "warrant further examination."

The machine tool industry in Britain evolved from a large number of small family companies and the present structure reflects this fact. There are about 250 companies manufacturing machine tools or components for them as their primary business. The pattern is similar among the U.K.'s major competitors and the average size of companies is not significantly different in the U.S. or West Germany, for example.

The major restructuring in the later part of the 1960s did produce some larger units, however, so that to-day seven large groups account for around 35 per cent. of machine tool sales and export production.

These are, in strictly alphabetical order: John Brown, which through Wickman and its subsidiaries last year had machine tool manufacturing turnover of £55m. and profits of £770,000.

Cincinnati Milacron, owned by the American group of the same name but which has been operating in the U.K. since 1934. CM accounts for about one quarter of the numerically controlled

machine tools made in Britain and for more than one third of those exported. Sales top the £25m. mark.

B. Elliott, which takes in Butler Machine Tool and Snow and Co., as well as Elliott Machine Tools. Elliott has diversified into other activities while cutting back on its machine tool operations for which it gives no separate statistics. The group as a whole last year had a turnover of £46.3m. and profits of £3.23m.

Alfred Herbert is among the "big seven" as is Staveley Industries, another group which at one time gave cause for concern. Staveley's machine tool manufacturing companies are now in fine fettle—they are Asquith, Drummond, Kearney, Richard and Staveley-Lapointe.

The company's so-called "mechanical" division, so it is difficult to isolate just how much of Staveley's £31m. turnover and £3.6m. profit in the 1975-76 financial year actually came from the machine tool operations.

The 600 Group, which now insists it is "the U.K.'s largest maker of machine tools" and takes in such well-known names as Colchester Lathe, W. E. Sykes, F. J. Edwards and so on. Last year the group's machine tool division made profits of £3.9m. on a £48.5m. turnover.

Tube Investments' "machine division," which the group says is "one of the largest machine tool, machinery and associated equipment organisations in Europe," has Matrix as Charles Churchill among its best-known businesses. Tube Investments' machine tool division made profits of £2.5m. (before loan interest) a turnover of £44.5m. in financial year.

Among the successful medium sized concerns is Hart Machinery International which includes such names as Acworth, Alexander Machine, Broadbent, Qualters and Snel Bros. and Stanley Machine. Its machine division made profits of £1.6m. and profits £270,000.

This makes it somewhat smaller than Wadkin, known for its woodwork machinery, which had a turnover of £13.4m. and profits £1.6m. Another "quoted" company in the sector, A. Jones and Shipman, made profits of £1.8m. on a turnover of £10.7m. Adcock-Shipley, no part of the Tectron coglomerate and therefore American-owned, must be about the same size as Hartle but separate statistics are not published.

Kenneth Goodin

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## MACHINE TOOLS III

## Boosting the aid scheme

ING the next few weeks the Department met from the industries involved in the aid schemes operating that year. And it was not just that a number of applications was low and that they were slow to arrive. The quality of the projects put up for consideration also left much to be desired. The Department would have liked to have seen, for example, more machine tool companies asking for cash to help launch new products. Instead it was invited to consider frankly pedestrian projects involving no real change of direction for the companies which applied.

The machine tool manufacturers argue that this was mainly because the Department did not do enough to "sell" the scheme to the industry. Perhaps it was a reaction to this criticism which produced last month's big publicity campaign by the Department—the changes to the scheme were certainly given a much better send-off than the original scheme itself—and the aforementioned trip by Lord Brown.

## anges

We want to help this industry into growth markets growth prospects," declared Peter Carey, Permanent Secretary to the Department of Industry, last month when discussing some significant changes to the scheme. He said that "this is an important aspect of the new industrial strategy and these changes underline the Government's commitment to the industry."

Lord Brown's travels are just indication of the drive to the scheme into a success. And the fact that £20m. public money has been allocated to the machine tool industry shows that the Government certainly needs no convincing about the importance of the sector. That £20m. is a sizeable sum, particularly when measured against the 30m. annual turnover of the comparatively small industry.

Yet in its first year of operation—up to August—the scheme produced a disappointing response. Only nine objects were approved, involving assistance of nearly £m. towards a total investment of £10m. by the companies concerned of 6m.

This was the poorest response

ability to invest and to retain the skilled people it needs, that the industry was chosen as a proper candidate for an aid scheme in the first place. The Government has been convinced that the machine tool industry is vitally important to the U.K. economy and recognises the benefits manufacturing industry as a whole would gain from Britain having a technological lead in machine tools.

So the machine tool aid scheme was aimed particularly at encouraging the launch of new products, the modernisation of plant and buildings and the general all-round improvement in the industry's efficiency and competitiveness.

That might be so, the machine tool makers reply, but they point out that several companies had their proposals turned down flat. And that kind of news gets around to discourage the others. Dr. Adolph Frankel, chairman and chief executive of Staveley Industries, one of the first recipients of aid scheme cash, points out, too, that only companies of a fair size could expect to have the staff available to handle the detailed questions the department needs to have answered and to develop a "project" of the type required in the first place. (It is only right that the Department should try to make sure that public money is put to the best use but there is often a natural disappointment at the companies when they see the numbers and depth of the questions they are expected to cope with when making an application.)

Limits

And the changes announced for the scheme last month are specifically aimed at encouraging smaller companies to show more interest. The eligibility limits have been lowered so that projects involving a company in an outlay of £25,000 for modernisation, rationalisation or expansion of capacity will now be considered. Previously there was a £50,000 lower limit.

The eligibility level for project development schemes has also been halved, from £100,000 to £50,000. The form of assistance for schemes for the design, develop-

ment and launching of new machine tools was changed to a straightforward grant of 25 per cent. of eligible costs—something the smaller company can more easily understand than the previously rather complex formula.

(In this context it must be remembered that some very small—in turnover and volume terms—companies in the U.K. have developed machine tools which became world leaders in their particular sphere.)

The changes also introduced a grant of 50 per cent. of approved consultancy fees for "small and medium-sized" companies which employ consultants to investigate problems and to formulate proposals for improving the concern's productivity and efficiency.

This is similar to a provision in the textile industry aid scheme and is designed to help

those managements burdened with questions of immediate survival to obtain some outside help to look a little further into the future.

The Department, however, resisted any temptation to offer money more cheaply.

The Department is sure that the more the companies themselves contribute, the more chance there is of the proposals they put up being worth while.

The present rate of relief is judged to be about right enough to stimulate new investment but leaving enough for the companies themselves to find.

Neither has it proved possible to lower the eligibility limits further in the search to help more small companies. The feeling is that the new lower limits set do not represent particularly large amounts

even for small companies. Then there are the administrative problems which would arise if the Department tried to process a large number of very small projects.

There is still time for companies to come forward. Applications must be submitted by December 31 this year, though, and the projects must be completed by the end of August 1978, or in the case of new project development, by August 1980.

The Department's regional offices will deal with inquiries about the scheme and, in the words of Sir Peter Carey, "It costs nothing to discuss ideas with the Department. Anyone can go along to their local regional office and see if there is anything the aid schemes have to offer his company."

Kenneth Gooding

clear to European manufacturers the strong growth in demand in that CECIMO's most important prospect for the years 1977 and role is that of assisting in the 1978, given the present and expected capacity in the industry, to trade, such as national safety regulations. Though these may be only seem minor matters, their importance in overall trade and industry estimates.

Further steps should not be underestimated. Factor in overall demand for metal working machine tools, the size of world markets and and in the past four years have Britain's position within them is illustrated by the fact that in 1974 West Germany produced machine tools worth \$2.7bn., followed by the U.S. with \$2.1bn. and the Soviet Union with \$1.8bn. Britain and France each produced machine tools worth about \$800m.

The Soviet Union was the world's largest importer, followed by France, Poland and the U.S., which bought machine tools worth \$258m. in that year. In exports, West Germany is dominant, selling goods worth nearly \$2bn., or more than four times the value of those sold by its nearest competitor, the U.S. In the year Britain sold goods worth about \$150m., as did France.

As far as the U.K. is concerned the recession in West Germany has had damaging effects and caused some decline in its purchases, and sales to the Soviet Union have fallen from the levels of 1972 and 1973. British exports as a percentage of deliveries expanded in the late 1960s to around 50 per cent. in 1971, and although the ratio fell back during 1972-73, it is now recovering, according to industry sources.

Machines for grinding, turning and "other metal forming" have shown the best growth in recent years, with unit and transfer machines, milling machines and hydraulic presses also showing an upward trend during the current year. It is reliably predicted that the downward cycle of declining sales, new orders and order books will continue until about the end of the year, by which time there should be signs of further recovery in overseas markets as well as improved confidence in the U.K.

It appears likely that the recovery in export orders will be ahead of the home market, but this is not regarded as certain because the investment cycle, co-operation of the Machine Tool Industries. These were that unless there was a flow of firm orders in Europe soon, the Community's industry could contract substantially.

It was pointed out that there has been a fair amount of bank-ruptcies and closures recently, will recur. But in the longer term it is

Should this happen, despite

Lorne Barling

## Exports show good growth

ONE OF the country's key indicators of economic activity is the sales of machine tools, and with the current emphasis on an export-led economic recovery the industry's performance in overseas markets is of great significance.

Latest figures suggest that, despite the continuing slowness of the home market, exports are growing faster than imports; in the first seven months of this year they passed the £113m. mark. The balance of trade in machine tools at the end of July stood at £35.8m., compared with £24.8m. a year earlier.

Recent Government statistics show that the value of exports has grown by more than 16 per cent. this year, while imports have risen by only 10 per cent. in comparison, although this may still be distorted by inflation and not be quite so favourable when seen in unit terms. Nevertheless, the Machine Tools

Trade Association is confident that last year's performance will be easily improved upon.

Considerable activity continues on the part of the Machine Tools Trade Association to boost exports, and it has undertaken a major publicity campaign in more than 30 countries in connection with the International Exhibition of Machine Tool Gauges and Tooling in Birmingham. This is seen as another way of reaching the export markets which are so important to the industry's recovery from the recession.

Narrowed

The U.S. remains the British industry's major market, with goods worth nearly £18m. sold there last year, but their predominance which existed in 1974 has been narrowed and South Africa (£13.5m. in exports last year) and Poland (£11.1m.) follow not far behind.

They are followed by France and Spain, with purchases of about £8.5m. each. West Germany with £8.2m., Brazil £7m., Sweden £6.8m., Australia £6.3m., the Soviet Union £5.9m., Canada £5.7m. and Italy £5m. The Italian market is notable in that it has dropped from Britain's third largest market in 1974 to 12th position in the league table, although the actual value of exports has fallen by only £1.6m.

Unlike other industries, Europe is not apparently gaining much ground in terms of exports, which is possibly borne out by the recent findings of the European Committee for the co-operation of the Machine Tool Industries. These were that unless there was a flow of firm orders in Europe soon, the Community's industry could contract substantially.

It was pointed out that there has been a fair amount of bank-ruptcies and closures recently, will recur. But in the longer term it is

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Exports remain the dominant factor in overall demand for metal working machine tools, and in the past four years have averaged 44 per cent. of total sales. Assuming that price competitiveness will be broadly maintained at its present level, the medium-term outlook for the industry is for a stronger growth in demand in both foreign and domestic markets. It is projected that in the period up to 1979 total exports of machine tools and investment in plant and machinery will rise faster than in the past. The growth figure is tentatively put at 1.5 to 2 per cent. a year assuming 3 per cent. growth in the GDP.

Quality

Although the most important factor in export markets undoubtedly remains quality, the efforts of the MTTA are recognised as being rewarding in many cases, for example in the increase in sales to Japan in 1973 and 1974. But there are pit-falls in encouraging high trade levels with other countries, most notably the amount of imports sucked in.

In recent years the penetration of EEC exporters of machine tools to the U.K. is more impressive than Britain's sales in the other direction. However, there is an underlying trend towards an increasing trade surplus with the EEC, according to a recent report. It suggests that while this trend cannot be expected to continue, the fast rate of growth in the EEC market of 11 per cent., together with lower tariffs because of EEC membership, the price advantages arising from these and a strong competitive position in most tool types, particularly drilling, turning, boring and numerical control machines and equipment, should ensure that Britain can maintain a mildly favourable balance in a context of a greatly increased volume of trade.

Areas of greatest potential growth are seen as centring around the Eastern bloc countries, Japan and the United States. Although the former tends to be unpredictable, the need for Western equipment is likely to continue at an increasing pace.

Lorne Barling

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## MACHINE TOOLS IV

## Constraints of demand

"THE DEMAND cycle, which says the strength and confidence of the industry during a recession and leaves it weak to meet the following upturn, constitutes the most serious constraint on the industry's performance. Many other problems are linked with this," says the machine tool "Little Noddy" in a recent industrial strategy report.

There is nothing startling or new in that. It just echoes what the machine tool industry has been saying for many years. The whole industry is put in a state of permanent turmoil by the uneven cycle of demand from which it seems impossible to escape. Some companies manage to alleviate the problem by greater exports, others by factoring an increasing part of their sales and others by turning themselves into pure importers or agents.

But several companies have been driven out of business completely and there are English towns which have specialised in the manufacture of machine tools since the inception of the industrial revolution from which the industry has now completely disappeared.

Two years ago the industry, through the "Little Noddy," made another attempt to overcome the complacency of the authorities who, according to Mr. Anthony Frodsham, chairman of the EDC, "recognise the existence of the cycle but reckon it to be a minor problem which a more ingenious industry would take in its stride."

It has been a long haul but the message seems to be percolating through. The Government's so-called accelerated investment scheme designed to encourage companies to bring forward capital investment or to take down shelved projects during this current recession, was certainly a counter-cyclical scheme, albeit of the ad hoc kind.

The Government made available £120m. for this scheme and by the end of last month nearly half of that sum had been committed. Some £55m. had been offered or approved to help 63 projects expected to generate an extra £400m. of investment during the next five years. Another 146 applications were being seriously considered for help with projects involving another £563m.

To look at the longer term, a committee was set up under the chairmanship of Sir Eric Roll to consider what changes might be made in the way British industry is financed. This body is due to report shortly. The possibility of a counter-cyclical scheme or schemes has been one of the things considered. The committee was provided with evidence from the "Little Noddy" which gave a stark outline of the debilitating effects the cycle has on the industries it hits, unsettling the workforce, sapping competitiveness in overseas markets, encouraging imports and cutting cash flow and profits as often as two years in every five.

## Harder

The paper also showed what the industry had claimed for years—that the machine tool sector is hit harder than any comparable industry. It revealed that the standard deviation from "normal" in U.K. demand over a 14-year period was 24.5 per cent. And, as a result, falls in employment during recession have been as high as 33 per cent.

The cycle is an endemic feature of a free market economy. It is fast-growing, the EDC pointed out, so the disease cannot be cured completely. But the worst of the symptoms could be alleviated by some kind of counter-cyclical policy.

This would, in no way be aimed at encouraging U.K. industry to buy more machine tools or other capital goods or even to buy more made-in-Britain products. It would simply encourage a change in the timing of investment by user industries which would prevent the trough in the cycle of demand going as deep as it might otherwise have gone.

Dealing with the effects of the cycle on capital goods suppliers like the machine tool makers, the "Little Noddy" paper pointed out that it creates unease among employees. Those laid-off during a recession usually fail to return when the upturn comes; those employees who remain are worried when it might be their turn to go and tend to look for jobs elsewhere when they can; potential recruits are also put off. The problem is made more acute because the people involved tend to be reasonably skilled.

At the same time, the cycle

has produced extremely cautious managements. Regularly faced with problems of survival, and difficulties of raising finance, they often interrupt their own investment programmes, thus lowering the industry's ability, and perhaps willingness, to grow.

These factors combine during the surge in demand which inevitably follows the trough to damage U.K. industries' competitiveness overseas because of the long delivery dates which then have to be quoted. Another result is that imports are sucked into the U.K. because home suppliers cannot cope.

The evidence suggests that the process is not completely reversed during the bad times. Once foreign competition has gained or expanded its foothold, it is very difficult to dislodge it. The result is that imports permanently tend to increase as a proportion of domestic requirements.

The "Little Noddy" put forward for discussion a number of counter-cyclical ideas, both of the ad hoc type and others—more generally favoured—inviting the industry and Government in the creation of some form of investment reserve fund.

Under such an arrangement companies would set aside a proportion of their earnings in any year to a special reserve which they would be encouraged to use for investment purposes during a recession and would be discouraged—

though not prohibited—from using at other times.

The general principle would be that allocations to the investment reserve would be free of tax—though a sum equivalent to corporation tax would, until the reserve was needed, be deposited with the Bank of England or another authority.

## Advantages

The advantages of such schemes over ad hoc arrangements like the recent accelerated investment scheme, are that they provide a means of involving companies in making at least some advance commitment to investment, and could help to move those commitments by use of incentives, or constraints, towards the trough of the cycle.

It would also give capital equipment producers an assurance that the Government accepts the need for counter-cyclical action.

A counter-cyclical scheme would ensure that more funds were directly available to finance investment during recessions and, because the Government commitment to pay bonuses or other incentives would be restricted to money withdrawn from the reserve, these schemes could also be less expensive than the open-ended ad hoc arrangements.

The effects an investment reserve scheme could have on capital goods producers would obviously depend on the size of

the fund and how well it was spread across the plant and machinery purchasing industries.

The "Little Noddy" made a very rough estimate from the data available from a scheme which has been operated for some time in Sweden and suggested that, to be effective, a fund at the onset of a recession would need to be equivalent to about one-third of the level of home orders for plant and machinery which could be expected in an "average" trough year.

Given various other assumptions, the net result could be that demand might be lifted by about 8 per cent during the trough.

In spite of the "Little Noddy's" efforts, backed wholeheartedly by the Machine Tool Trades Association, Government interest in the idea of creating a counter-cyclical investment fund on the Swedish lines seemed to have waned. Some enthusiasm was shown earlier this year by the Government after the proposition had been pushed strongly by the unions and this is why Sir Eric Roll's committee exists to-day.

The Government's interest diminished when preliminary investigation showed that any such counter-cyclical scheme in Britain would involve substantial injection of State cash and would take several years to become effective.

A major obstacle to all the counter-cyclical proposals was found to be the need for both

a reasonable level of profit among companies and/or a high level of effective tax payment on which relief could be given to induce companies to set aside the funds.

Without these preconditions companies could be encouraged to operate such a scheme only through interest relief or other benefits given by Government—or—if they were forced to set aside the funds—the money would have to come out of their general working capital.

Under the voluntary Swedish scheme, companies can set aside up to 40 per cent of their pre-tax income for the fund, 46 per cent of which is put into a blocked account which can be released only by Government permission (when a "cessation" is formally declared). The attraction of this arrangement, which involves no direct Government subsidy, lies in the relief from taxation and the write-off provisions once the money is used—neither of which would be so attractive in the U.K. where effective tax rates are lower and accelerated depreciation exists for nearly all capital investment.

It remains to be seen what the Roll committee will say on the subject. But the machine tool industry hopes that the Government, at the very least, will indicate that it will have ready another accelerated investment scheme and introduce it much earlier in the next trough in demand.

Kenneth Gooding

## Numerical control

WHEN THE Machine Tool Industries Research Association carried out its massive survey of reliability involving some 9,400 metal-cutting machine tools, which was completed about a year ago, it was realised that there were not enough numerically controlled machines covered to yield a truly representative cross-section and a further investigation was undertaken.

Recently finished, this included 182 numerical control tools and it showed a number of findings which, at first glance, would reinforce the arguments of the diehards who will not have anything to do with these "newfangled gimmicks" used for at least 20 years in key industries.

Where ordinary machine tools showed an average downtime of 2 to 3 per cent of available production time, due to wear, ingress of dirt or human error, the nc tools showed a significantly higher downtime and failure rate and were far more sensitive to the quality of maintenance than their less sophisticated counterparts.

There is a lack of the skilled engineer to maintain nc equipment and possibly too great a variety of nc systems in the field.

But there also are sub-contracting maintenance services and even if the cost of their work in a plant is considerably higher than if local maintenance staff are involved, a price has to be paid for expertise. It is likely to be much less than protracted downtime on high output machinery.

It may be that even the diehards will change their minds under pressure of the need to improve productivity as and when business activity recovers from the deep trough of 1975. Certainly the increasing availability of easy retrofit and easy to operate numerical controllers and aids to equipment performance such as digital readouts and high accuracy measuring devices should make their conversion much easier.

Some nc industry leaders clearly believe that other countries have a higher percentage of these barriers to efficiency. MCP Hewitt, of Plessey Numerical Controls, has pointed out admittedly on the basis of somewhat elderly statistics, that Britain appears to be ahead of both the U.S. and Germany in its use of nc tools, but in 1975 exceeded the latter's output of electronically controlled machine-tools by some 400 units.

Plessey is Europe's largest maker of machine tool numerical control equipment, ahead of Siemens, ASEA, Telemecanique, and Olivetti. But it faces severe competition from multinational giants based in the U.S. and from Japan in a highly fragmented market with about 40 suppliers of stature and some 150 minor participants.

One important factor in operating in this type of industry is the cost of maintenance and with customers all over the world, innovators have to tread cautiously before launching a new product because an undetected weakness in equipment, which has been widely distributed into areas many flying hours from headquarters, could cripple them.

This is one of the reasons why makers of nc equipment are likely to welcome the advent of the microcomputer which can

be mounted with several ancillary devices in a single printed circuit board and provide the sole control source for the machine tool, even a very complex one. The board is immediately replaceable should there be an electronics malfunction.

This means that a good deal of the old fears of innovation and sophisticated equipment could disappear quite fast and Plessey has been quick to take advantage of the greater design freedom and reliability offered by the microcomputer.

Earlier this year, it brought out equipment based on microprocessors and intended specifically to make any company's move into numerical control very much easier. Development of the RUSC system of part programme producer and matched machine controller was timely since it was believed within Plessey that computer numerical control based on minicomputers could not compete with hard-wired control equipment except in exacting cases or where users wanted to run a group of machines.

The microcomputer in the company's view brings down the total cost to the level of that of hard-wired equipment while providing by and large the same program storage and editing flexibility as the more expensive minis.

This is not to say that the company is opting out of equipment based on minis since it is showing the NC3700 at MACH 76 alongside RUSC. But NC3700 can cope with up to six axes including spindle, control-ling them simultaneously

whereas RUSC stops at four. This is not a strictly valid comparison since RUSC is a dual system of interpreter and machine controller while NC3700 can be applied to any machine tool.

However, this is a sign of the times since MYTRA itself has developed and built a prototype microprocessor for use where the range of sequences demanded by the job is too much for the capabilities of programmable sequence controllers. It will be displayed on a sheet metalworking machine from the Oliver Machine Company.

It is unlikely that many of the protagonists of computer numerical control (cnc) will agree with the Plessey view. That could well be their loss since Plessey, as a major international electronic components company has been well aware of the possibilities of the microcomputer for some two years and has reached a wide-ranging understanding on support and the construction of practical devices based on the Intel 8080, considered by many to be the best-understood and widest used unit of its type.

Initial reaction to RUSC has been that it solves one of the main problems of nc operations—that of part programming, since the operation to prepare this set of control instructions can take place away from the workshop while the machine tool is producing other parts. It is also much more rugged than the equivalent mini-based equipment.

The appearance of this approach to nc could also down the threshold of application by a considerable amount. There is a need to do this, underlined by the attempts to cut costs at low quantity manufacture which still be economic by nc methods.

One of the most recent of these is the writing by MITRA of a tailor-made processor which will automatically produce tapes for the manufacture of components having external turned forms. It applies to the manufacture of ranges of components which, though widely varying form, can be made on a specific workpiece and a given selection of tools.

Time alone will show how different approaches are to European market where annual demand for nc installations is roughly equal to that of the U.S. at about 2,400. The major let is Germany with 750 a year with the U.K. at 850, Italy at 500 and France at 300.

Ted Schoeters

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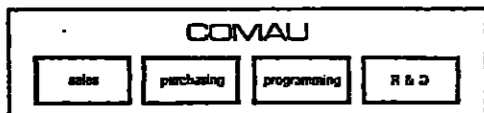
## What is COMAU?

The COMAU stands for a group composed of a variety of companies engaged in the metalworking, assembly, and special welding machine fields, together with the supply of complete systems

for large, medium and small scale production.

It possesses 10 factories, employs 4700 people, and has an annual turnover of \$130 M.

The Group and its main operating divisions:

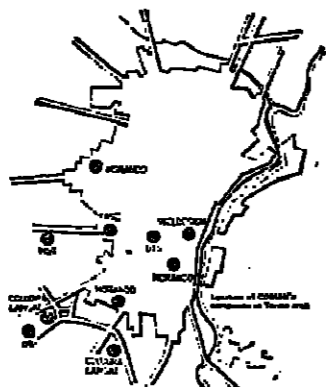


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Interlinked commercial and operating divisions and its association with two expert engineering offices (UTS & Weldesign) enable COMAU to offer a full range of services. The planning and setting up of factories and complete systems are undertaken, with full responsibility for the job, from the investigation of methodological processes to the supply of all the machinery and equipment required.

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Economical solutions based on advanced techniques can be proposed for all problems relating to either special machines or complete plants.

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- Storage equipment for mechanical components, sheet metal parts (bodywork) and for diversified manual, semiautomatic and automatic (e.g. computerised) applications.

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COMAU is essentially associated with automobile, truck and tractor manufacture worldwide.

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Italian technology has made its mark in the FSM and FSO factories in Poland, and at Belo Horizonte in Brazil.

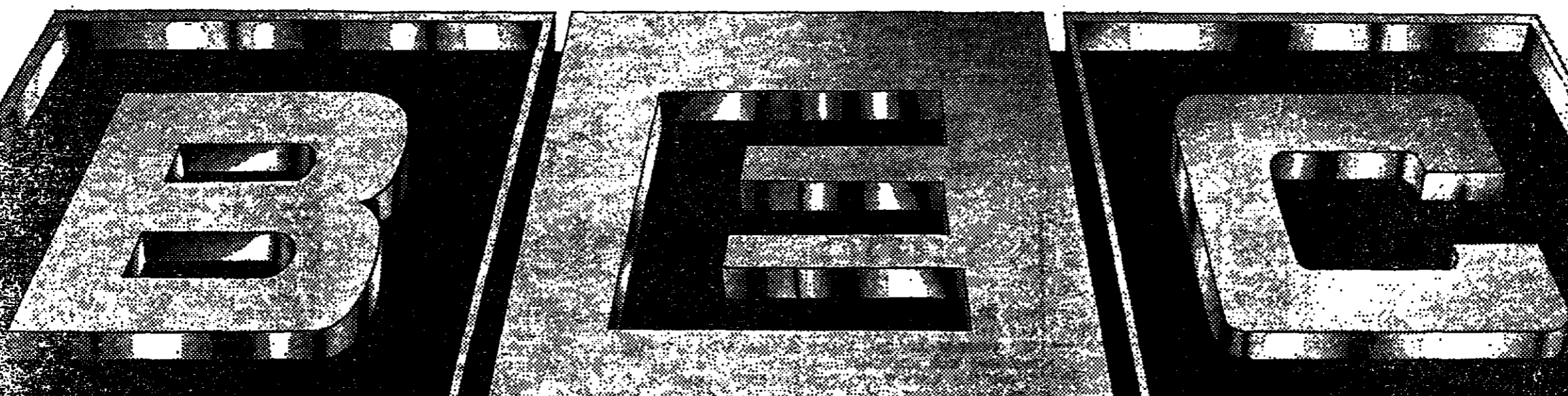
Lastly, COMAU will be engaged in the setting up of a factory for the production of mammoth earthmoving machinery at Cabokary (USSR).



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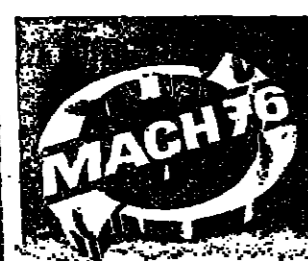


It is not unrealistic to say that the success of Mach 76 has a direct bearing on Great Britain's economic recovery.

A lasting recovery can only be based on a capital equipment investment programme which will enable British industry to compete successfully in world markets.

The importance that the B. Elliott Group—BEC—places on Mach 76 can be judged from the fact that six of the BEC companies will be exhibiting nearly one hundred machines, many of which will be completely new to the UK.

These machines are the tip of an iceberg. BEC manufactures and markets in the UK and overseas what is probably the world's widest range of metal cutting and metal forming machine tools, from a £120 bench lathe to a giant press valued at £250,000.



International  
Exhibition  
of Machine Tools  
Gauges & Tooling  
National Exhibition Centre  
Birmingham, England  
22 Sept-2 Oct 1976

#### BEC AT MACH 76

BEC is represented by these six companies who, between them, are displaying ninety-nine machines, many of them completely new to the UK:

The Butler Machine Tool Co Ltd

Stand No. 5.58

Snow & Co Ltd

Stand No. 5.58

Elliott Machine Tools Ltd

Stand No. 5.59

Elgar Machine Tool Co Ltd

Stand No. 5.27/5.45

PMT (Machine Tools) Ltd

Stand No. 5.17/5.54

The Press & Shear Machinery Co Ltd

Stand No. 5.10/5.59

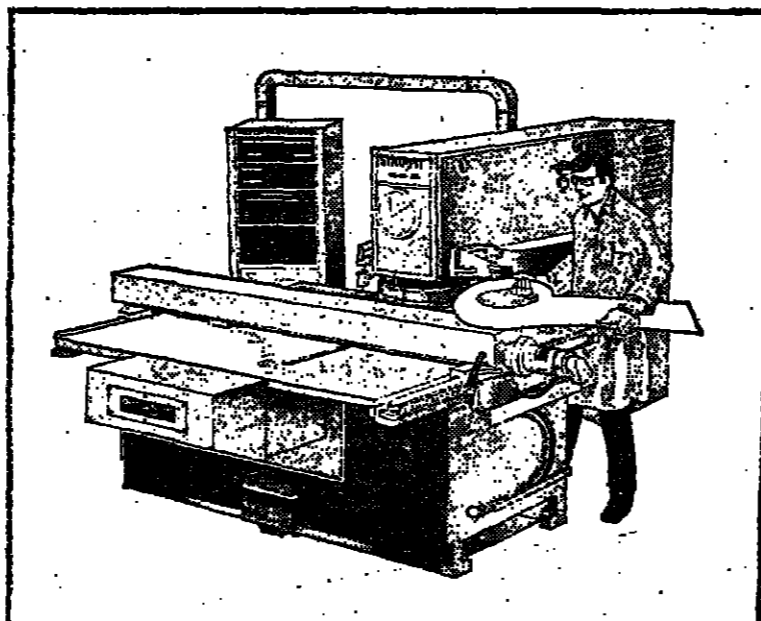
BEC's financial and organisational strength is based on a divisionalised structure and a judicious mixture of manufacturing and marketing operations. Between them, the divisions offer industry wide-ranging services which extend well beyond the machine tool

sector. These include ferrous castings, pressings, specialist engineering products as well as a complete range of machinery for the plastics processing industry.

#### Structured to serve industry

To avoid the slow reaction to fast moving trends which often characterises large organisations, BEC operates autonomous divisions, each serving specific market areas. Operating subsidiaries are of the right size to ensure personal customer communication.

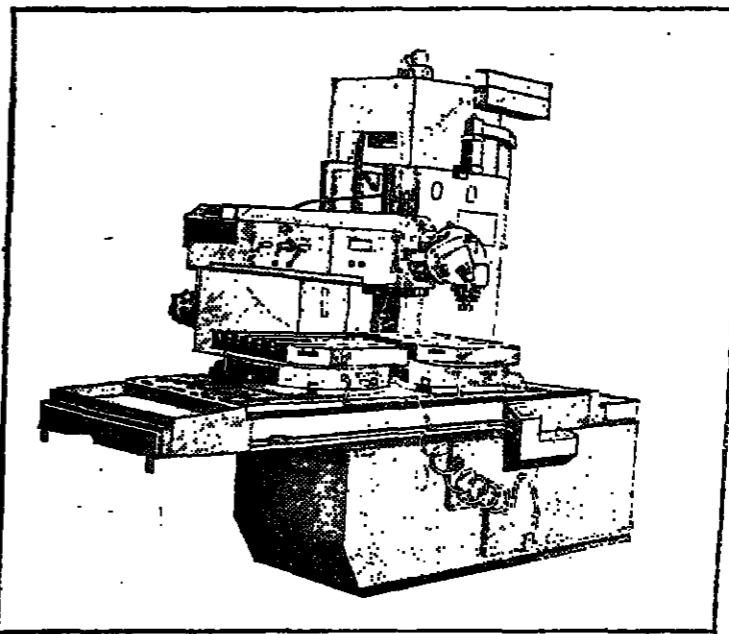
The small BEC headquarters provides financial support and, equally important, the "wider view" of technological developments which is so important in the world of machine tools.



A numerically controlled Strippit turret punch from The Press and Shear Machinery Co. Ltd.

This "wider view" has led BEC to commit considerable resources to handling a greater proportion of more sophisticated equipment, which has remained in high demand throughout the recent recession.

The machine tool industry is notoriously cyclical. Mach 76 comes at a time when the graph is expected to move sharply up. Then once again the machine tool industry will be quoting extended delivery dates.



An Elgumill from the range produced by The Butler Machine Tool Co. Ltd.

BEC, with its mixture of manufacturing in Britain and merchandising of the best machine tools from around the world, is in a strong position to counter such a cyclical trend, and to meet customers' needs from one of its manufacturers or suppliers.

Against the trend, 1975/76 was BEC's second best profit year on record; sales were split evenly between customers at home and overseas and direct exports from the UK were up by more than 25%.

BEC's participation at Mach 76 and the range of new and proven machine tools on display are an accurate reflection of the company's faith in the future of British manufacturing industry.



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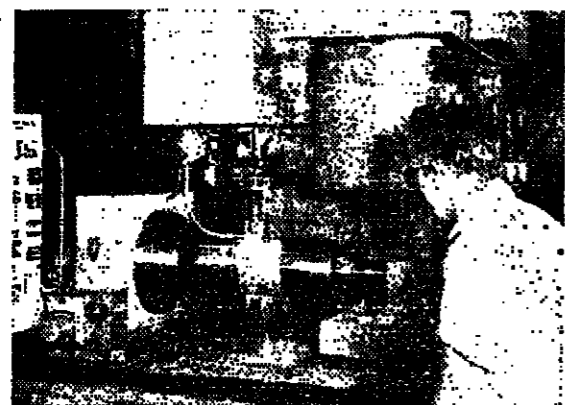
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## NC machine tools that are charting the new course of manufacturing productivity



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You can see these new machines in operation at MACH '76, National Exhibition Center, Birmingham, England, 22 September-2 October.

For literature, ask for bulletins listed under the illustrations. For more complete information about Monarch and its U.S. and European operations, send for our 1975 Annual Report and 1976 Quarterly Reports. Write The Monarch Machine Tool Company, Sidney, Ohio 45365 or Dean Smith & Grace Ltd., P.O. Box 15, Worth Valley Works, Pitt Street, Kington, Leicestershire, England BD21 4PG.

**The Monarch Machine Tool Company**  
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## MACHINE TOOLS VI

# Growing use of leasing

THE LIQUIDITY problems experienced by many engineering companies during the past two years have been an important element in the need for more sophisticated financing of machine tool purchase, in which a number of finance companies have built up considerable expertise.

Although engineering concerns are undoubtedly conservative by nature and would often prefer to replace equipment out of earnings, or perhaps by means of conventional bank borrowings, this has not always been possible due to reduced cash flow.

This has come about largely as a result of inflationary pressures such as higher material and labour costs, the dull market of the past two years and the need to replace equipment which may have been outdated before any of these problems arose. Of course many companies have taken the decision that markets are so uncertain that investment in new machine tools is foolhardy, and have adopted the policy of when

in doubt, do nothing. But this is certainly a shortsighted view which could lead to companies becoming uncompetitive and the standard of their products falling.

For these reasons many engineering companies, particularly smaller ones, have gone for less conventional means of finance, such as leasing and hire purchase. Both are comparatively new to British industry, although they have become increasingly popular with sectors such as road transport and mechanical handling equipment.

A number of companies have specialised in machine tool financing, with Mercantile Leasing (a subsidiary of Mercantile Credit), Schroder Finance, Credit Lyonnais and Bowmaker among the better known. The Association of European Machine Tool Merchants and others connected with the trade have been active in making the various facilities known to their members.

Perhaps the most valuable systems. But the persistent fluctuations in minimum lending rate in recent years has made it difficult for leasing companies to offer this kind of deal widely.

The mechanics of leasing and hire purchase are perhaps best explained in terms of schemes offered by major companies. Schroder Leasing points out that under a leasing agreement the equipment always remains the property of the finance company. A normal lease comprises two parts known as the primary and secondary periods, with the primary period usually of three to five years duration, and it is during this time that the finance company recovers its investment cost and charges by means of either monthly or quarterly advance rentals. On expiry of this period, the lessee can enter into a secondary period by paying nominal rentals.

Schroder suggests that the major benefits are as follows: Immediate use of new equipment without capital outlay and retention of working capital with rentals, with continuing inflation, considerably reducing in real money terms, as the lease progresses.

In addition, the whole of the leasing rental (excluding VAT) constitutes a revenue expense year while a machine is coming to reduce its tax liability. Leasing finance charges are based on the equipment cost, excluding VAT, so that as each rental falls due it is subjected to VAT at the current rate. However, a lessee who is registered for the purposes of VAT is able to recover this as an input credit.

Furthermore, it is pointed out that a lease does not appear as a liability on the lessee's balance sheet, and borrowings ratios are therefore unaffected and other credit lines remain unimpaired.

Finally, where equipment is leased for use in qualifying premises located in a development or special development area, the benefit of the grant received by the leasing company can be reflected by means of a reduction in the rentals payable under the leasing agreement.

Schroder's purchase lease scheme is described as nothing more than a lease containing an option to purchase, with the lessee becoming the owner of the equipment merely by paying a nominal option fee. Purchase of lease is, however, only available to limited companies or where the total purchase price (including the finance charge and any deposit) exceeds £2,000.

The benefits outlined are: the ability to claim a 100 per cent first year allowance on the net of VAT cost of equipment, with the proviso that the lessee must

be earning taxable profits adequate to absorb the allowance. The finance charge element of each rental is a charge against the lessee's taxable profits, thereby reducing still further the lessee's tax liability.

Rentals are fixed over the period of the lease, facilitating accurate budgeting, and the lease is 100 per cent financing with no deposit normally required.

Finally it is noted that normal leasing is tending to become more expensive. Therefore, while purchase lease rentals are usually somewhat higher than normal lease rentals, if the lessee is able to absorb fully the 100 per cent first year allowance, the total net tax cost over the full leasing period may be less than the cost of a normal lease.

Mercantile Credit's deferred purchase scheme is described as "a classic case of instalment credit" with regular repayments facilitating sensible budgeting, and arrangements that can be varied considerably. One of these offers special agreements to align repayments with income flow. For example, they can be lower in the first year while a machine is coming into full commission, or be made on a seasonal or irregular basis to suit particular trading patterns.

The argument in favour of these financing arrangements were well summed up recently by Mr. N. J. Donkin of Schroder Finance: "It is surely a waste of resources to spend money on assets which are likely to appreciate, such as land and buildings, rather than on machinery which will decline in value," he said.

He commented that it was strange how some companies were still convinced that they must own all their own machinery, adding that there was no intrinsic value in ownership and that it was only the efficient use of equipment which generated profits.

The drawbacks of using outdated machine tools were well known—they tended to be inefficient and costly to maintain, and the profits of the user were overstated as a result of equipment having been fully depreciated.

With replacement costs rising all the time, provision was not being made under these circumstances towards meeting these costs. Indeed, the cost of replacement was frequently regarded as a major obstacle in the way of replacing worn equipment, because the user became convinced that only a substantial cash outlay would allow him to change to modern machines.

Lorne Barling

## Leyland: hopes and problems

THE MOTOR industry is probably the major domestic user of machine tool manufacturers' action on this front will carry the main investment build up well into the period of the next general industrial resurgence.

Because of the size of the Leyland investment—£1.5bn. at 1975 prices over the eight years to 1983—it is important that the ordering pattern is spread out in an orderly fashion over the whole period. If Leyland fails to achieve such a pattern and a log jam of orders builds up, there is a great danger that many contracts will go overseas. This is exactly what no one wants to see happen, least of all the Government, which saw its rescue of the motor company as one means of helping in the generation, through Leyland's orders, of a general industrial revival.

The machine tool industry's concern over Leyland's ordering procedures is a significant factor behind the growing anxieties about the company's industrial relations problems. Because of these difficulties capital investment projects were summarily cut off back in the winter of last year. Mr. Derek Whitaker, the managing director of the group's car organisation, said that the company was in no position to press ahead with investments while the disputes continued. Although Leyland would clearly have taken a considerable time to reach its key decisions in any case, there are signs that this move has delayed approaches to machine tool manufacturers. Both the truck and bus and special products groups appear further ahead with their development policies than the car group.

The timing of BL's investments is even more important in the context of the similar plans which are also being pushed through at Chrysler UK following the Government's intervention last year. Chrysler is due to launch two more cars in the next three years and a new commercial vehicle. Clearly, many of these changes will demand considerable machine tool investment, even though some of the vehicles have been designed to make considerable use of existing designs and components. For example, the new Alpine model now being assembled in the U.K. from French-made parts will gradually be adjusted to take more British-made components. Eventually, Chrysler may invest an extra £23m. in the project to make it an entirely British vehicle.

At the same time, the plan to integrate Chrysler's U.K. factories more fully within the group's European organisation may eventually mean more work for engine and other component lines within the British company. Here again there must be investment, particularly since Chrysler as a European group seems to be moving towards front-wheel drive designs, while the present U.K. company is closely wedded to rear-wheel drive techniques.

Recently at a House of Commons committee inquiry into Chrysler the Machine Tool Trades Association drew attention to the problem that could be facing the industry in servicing the future demands of the motor manufacturers. There are a number of areas said the MTTA, where capacity was insufficient to meet demand on the normal four to five year cycle basis. Such areas included one of particular interest to the automobile industry—transfer lines for cylinder blocks. Given the fact that Leyland is planning a new range of engines for its vehicles, this weakness of the machine tool industry must be of particular concern. Significantly, the MTTA added that the trade cycle since the early 1950s

had been "considerably affected by the ordering pattern of the major U.K. automobile companies."

In general terms these are not, of course, new problems. The significance of the motor industry to the machine tool manufacturers has been recognised for a long time, and a joint working party between the two sectors was set up in 1969. This identified no less than 20 types of machine that had been purchased abroad by the motor manufacturers at some time. The MTTA notes that they had been bought overseas "some times for reasons of technical superiority, sometimes for lack of purchaser knowledge of U.K. resources, and sometimes because, although U.K. products had proved their technical competitiveness subsequent to a first purchase, a change in the source of supply could not be made because of shortage of tooling."

The MTTA goes on: "The report emphasises that major tooling programmes depended on the introduction of new models and that these—for competitive reasons—tended to coincide between each automobile builder, thereby exacerbating the cyclical problem confronting the machine tool industry. The report concludes that vehicle manufacturers should give careful thought as to how they could give machine tool suppliers an earlier sight of their forward plans."

"It remains of vital importance, however, to the maintenance of sufficient capacity in the U.K. machine tool industry that firm commitments are entered into by purchasers at as early a date as possible."

A second major timing problem over BL's investments concerns possible overseas orders for British machine tools. Poland, for example, has indicated that it might want to place orders for a considerable portion of £100m.-worth of equipment before the end of this year. The Poland contract would be for a whole range of machines mainly associated with the country's budding tractor industry, which is being reformed with the help of Massey-Ferguson-Perkins. If the orders materialise as planned, they could be building up in importance through next year—just at the time when the industry may be stretching to meet Leyland's requirements.

Another Comecon bloc country, East Germany, is at any rate confident that it will be able to capture a substantial proportion of BL's new orders. It has already won a number of contracts from the special products group.

Some of the answers to the conundrums posed by BL's investment programme should be known before the year is out. The company is now heading into a period of intense activity which should see some of its most vital projects—the new range of engines, the re-equipment of the foundries, and the new Mini—signed off. The details of these will give the machine tool manufacturers a clear idea of where the most acute demands will be felt: for example, it looks as though the Mini replacement will be initially planned with the existing car's engine and gearbox, diminishing the immediate impact of what promises to be a very major re-tooling exercise. Whichever way these decisions go, however, one thing is clear: the machine tool industry will face a considerable challenge and opportunity in the years ahead.

Terry Dodsworth

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MACHINE TOOLS VII

# Secrecy surrounds NEB loans

SOMETHING which, in one case be a loan, whereas in another it may have to be the injection of equity capital. And the MTTA itself told its members: "Although the Association had hoped that it would have proved possible to produce a clear-cut 'universal' scheme, this has not been the case since NEB are unable to tie themselves to the formula put forward by the MTTA."

That formula had involved the setting-up of a source for funding on a deferred, but commercially rated, interest basis, using the stock created as the security for the loan — a way, in other words, of obtaining the sort of finance the banks and other lending institutions would not consider at a time when companies in need of cash could not afford the extra outgoings normal interest payment arrangements would involve. And there had been some comfort in the negotiations with the NEB on it. For the MTTA was able to continue in its letter to members: "It is considered by the Association negotiators, however, that this formula may well be used in some circumstances which NEB regards as suitable and they further hope that this may be found to cover a majority of cases."

Thus, the "commercial" requirement had to an extent been sidestepped after all, particularly when the effects of inflation on those deferred interest payments are taken into account. Sure enough, the first loan to be announced — indeed, the only one to have been announced so far — was on just this basis. The borrower was Alfred Herbert, itself an NEB subsidiary following its baili-out from acute difficulties by the Government. The loan is £5m. of which £2m. was taken up immediately, repayable within a maximum of two years, at a commercial interest rate, but with the interest not repaid until the loan itself is repaid. Earlier repayment is possible if the machines stockpiled are sold before the two years are up.

To-day, what other funding there has been is not known, though the NEB does say it has made loans to "several companies." But the overall amount involved is relatively small, certainly under £10m. including Herbert's £5m. At the time of the Herbert loan, in May, it was said that another six deals were in the final stages of negotiation, with about 20 firms in

quiries having been made. To-day, talks are thought to be in progress with around a dozen or so companies.

What seems clear is that response to the scheme has been somewhat disappointing, just as response to that earlier £20m. Government industry modernisation scheme was (so much so that significant changes to it were announced only last month).

The reasons for this are several. First, there is the suggestion that one quid pro quo for a loan might be an NEB equity stake in the company involved, something guaranteed to scare off some potential borrowers.

For the NEB is, as it emphasised in that February letter to the MTTA, treating each application on an individual basis. "We are approaching it in exactly the same way

as we approach any company which comes to us for money. Discussions have always taken place on an individual basis," it says. "There could even be a cash for equity deal" — though so far, apparently, the question of exchanging a slice of the equity for a loan has not entered into any of the discussions with individual companies (but, on the fringe of the industry, the NEB has just announced that it is to acquire 30 per cent. of the capital of Agemaspark, a private company manufacturing spark erosion machines, by subscribing £100,000 for new ordinary shares).

Also important is the fact that many machine tools are not turning out products suitable for stockpiling. A company with a range of highly successful standard products — the 600 Group's Colchester Lathe, for example — may be able to build stock rather than for an individual customer. Another group making sophisticated high technology machines tailored for individual customer requirements cannot.

Indeed, by and large the final touches can be added to a machine only after it has been sold and the customer has indicated just what he requires from it. Overall, of the 180 manufacturing establishments in the U.K., it is estimated that only just under half would consider building for stock at all.

Quite apart from that difficulty, some manufacturers see building for stock as in any case a possible hazardous occupation.

But, with the NEB not only allowing deferred interest payments but also accepting a position as creditor inferior to other

suppliers of finance, the consensus in the industry appears to be that the scheme is not only a highly important one but something which should be continued even when the machine tool makers' fortunes have recovered. Thus, Mr. George Trowbridge, president of the MTTA (and a major figure in the scheme's original formulation), stresses that the operation "should be perpetuated as clearly it offers a very useful form of aid as far as this industry is concerned."

It was not just "something which should be dished out only in times of famine but should be ongoing."

And the industry's Little Neddy, in its sector report drawn up as part of the Government's industrial strategy, stresses the need to ensure capacity is maintained, so that any boost to orders when the recession ends can be met by the industry. Building for stock could play an important role here, and there is no doubt that the NEB scheme is helping the industry, it says.

At the same time, the Little Neddy has no doubt about the limitations of the scheme. "NEB funds are unlikely to be sufficient to cover more than a small proportion of the need for additional stockbuilding finance," it warns. And it adds, "for technical and customer demand reasons, stockbuilding is not practical for all types of machines."

Nonetheless, the industry was building for stock on a "substantial scale, but lack of finance or fear of cash problems if the recession is prolonged will prevent many firms from doing this to the extent they would wish."

David Walker

## Cutting technology

THOUGH TUNGSTEN and titanium carbides are in themselves extremely hard materials, as are the refractory oxides or ceramics, they do not reach their full performance as cutting edges in tools for application on lathes, milling machines or shapers before they have been worked to a high edge quality by diamond grinding and lapping wheels.

Metal pressing dies in which the carbide powders are initially formed have working surfaces lapped to extreme smoothness by diamond compound. But if a tool of non-standard shape is required, rather than go to the expense of die-making, the pressed carbide form from the nearest shape available is shaped in the green state by electro-deposited diamond slitting discs, twist drills and grinding wheels.

It is thus of considerable importance to the tool industry that De Beers Industrial Krups in 1923 followed by the marketing of sintered tungsten carbide tool materials in 1926. It is still used in large amounts for the machining of short-chip materials.

In the intervening years, various additives have imparted new properties to the carbide and two streams of development have appeared, one following the addition of such materials as tantalum carbide to provide

high performance in steel milling, and the other providing a purchase in the embedding resin and the power absorbed is about 10 per cent. less across the board compared with competing grinding wheels of current diamond formulations.

Three types of grit are on offer to wheel manufacturers, two with 50 and 30 per cent. nickel as a coating for various wet-grinding applications and one copper-coated for better heat removal in dry grinding.

### Development

Two years' development and testing and a great deal of money have gone into the CDA project and the company is convinced it has a winner, particularly for arduous applications. Most widely used of the carbides is probably tungsten carbide on which a patent was taken out for the first time by Krups in 1923 followed by the marketing of sintered tungsten carbide tool materials in 1926.

Under Dr. Tom Bell, lecturer in the Department of Metallurgy, the unit will go into operation in January 1977 and will look both at the selection of materials and the heat-treatment of the finished product.

The project has been started because the toolmaking industry in Britain is fragmented and has not been able to take advantage of developments in the aircraft industry or in overseas work on plasma treatment. It is hoped to demonstrate how production costs can be reduced. Plasma Processing Unit will work closely with the Gauge and Toolmakers' Association to advise members on how the technology can be applied.

### Trend

For the finish honing in particular of cylinder and crankcase bores, diamond cannot be beaten and has in fact been shown to cost less than half as much as with silicon carbide sticks.

It is only in a relatively small number of cases that diamond, both natural and synthetic, is beaten by boron nitride and

then generally where extreme temperatures are generated. Illustrating the general trend towards production cost cutting by designing the cutting head in such a way that it can be indexed once wear becomes excessive on one cutter, is a series of new tools and tooling systems to be shown at Mach '76 by Birmingham Tool and Gauge.

Throw-away qualified tooling, which cuts out regrinding and reduces machine down-time to almost nothing, is the basis of three new systems from this group including a spade drill with two indexable cutting edges.

A carbide boring blade is held in place on a boring bar with a single Phillips Screw and a tenacious locking system in a layout which is closely followed by a new reaming device. The ground carbide inserts fit the pocket in the tool body in such a way that size seldom needs adjustment after indexing.

Meanwhile, there is such a variety of small tools and equipment in the Herbert repertoire — 60,000 items bought by some 35,000 customers — that the company has set up a Univac computer-based network to deal with orders, distribution and billing as well as re-ordering and management information.

Ted Schoeters

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## MACHINE TOOLS VII

# Association readjusts

THE MACHINE Tool Trades Association, like many of its sister bodies in other sectors of industry, is going through a period of reassessment as it grapples with the effects of inflation on the one hand and with the changing and, in particular, intensely more political scene in which it has to operate.

One of the earliest trade associations of its sort, it traces its origins back to 1910 when a handful of machine tool manufacturers and importers formed the Machine Tools and Engineering Association to act as a central body able to speak for the industry and trade, including negotiations with Government departments.

With an elected membership of 20 companies, it aimed to support itself by the organisation of exhibitions (and, at the same time, to work against the proliferation of exhibitions, many of them of doubtful value, then being seen). The aim was regular shows at sensible intervals, and an early success was scored within a couple of years of its foundation when two exhibitions proposed for 1912 and 1913 were replaced with a single event in the former year, controlled entirely by the company as it then was.

It was seven years later that the constitution was changed and the organisation renamed the Machine Tool Trades Association. The management also altered: in place of the 12 directors under a chairman, assisted by an advisory committee, a council was created, an executive committee elected for the conduct of day-to-day business, and the office of chairman replaced by that of president (with the first incumbent being Sir Alfred Herbert, who held the post for 15 years).

Four years later came further reorganisation with the setting-up by woodworking machinery manufacturers and importers of an autonomous group within the Association. In 1940 came another step forward with, after ten years of negotiations, the transfer of the interests of all machine tool importers, who had been previously represented by both the MMTA and the Machinery Importers Association, to the MMTA on condition that their rights and independence would continue to be honoured.

The same year also saw the

division of the Association into four sections, representing metal working machine tool manufacturers, metal working machine tool importers, woodworking machinery manufacturers and importers, and allied trades, each with its own committee reporting directly to the Association's council.

The war years, with their absence of much research and development, left the industry considerably weakened and out in the cold so far as many of its traditional markets were concerned. Once a world leader, the U.K. industry trailed behind its competitors, less ravaged by the effects of the war.

To an extent, it could be argued that the industry has never really recovered: certainly to-day its claim to pre-eminence is much weaker than it was before the war. Yet the MMTA's activities in promoting British machine tools abroad since the war have played a major part in promoting the not inconsiderable success the industry has had in regaining old export markets and creating new ones.

### Membership

For, despite being somewhat unusual in including importers among its membership (though many U.K. manufacturers of machine tools are also involved, sometimes significantly, in importing), the MMTA has long been among the more export-oriented trade associations. Since 1970 alone, it has sponsored, with Government support, 31 exhibitions around the world in cities as diverse as Peking and Sao Paulo, Moscow and Milan, Chicago and Tokyo.

In the same period, it has organised nine visits to members' plants by groups of industrialists—and potential buyers—from overseas, and sent abroad a further nine trade missions from the U.K. Backing up this trade promotional activity has been the publication of multi-lingual directories covering both British and imported machine tools.

Other overseas activity has come through the Association's involvement with such bodies as the European Committee for Co-operation of the Machine Tool Industries, the European

Committee of Machine Tool Importers, the European Committee for Woodworking Machinery Manufacturers, the International Organisation for Standardisation, and the International Electrotechnical Commission. And alongside all this has been liaison with U.K. diplomatic and commercial posts overseas and foreign chambers of commerce.

At home, the industry has been aided by the Association's activities on the manpower front: since 1982 it has been directly responsible for the recruitment of around 350 university graduates into the machine tool trade as well as sponsoring university courses for machine tool employees at Birmingham and Manchester Universities' Institutes of Science and Technology and helping to organise special courses in hydraulics and electronics for technicians and sales engineers.

On a different front, the MMTA has worked alongside the British Standards Institution in the publication of 67 standards applicable to machine tools as well as preparing and publishing material on safety, health and the environment.

The success of this sort of activity is reflected in the Association's standing within the industry it serves and, in particular, its high level of membership. With some 315 members, it now covers somewhere around 92 per cent of the industry's total turnover, a level many other trade associations would regard with envy.

To-day, it lists as its foremost

activity the promotion of trade, followed by the maintenance of contact and negotiation with the Government and its departments, advising on schemes for the education, training and manpower needs of its members, advising on matters concerning the environment and promoting standardisation, collecting and circulating statistical information, and increasing global awareness of the activities and problems of the British machine tool trade and industry.

In some ways, the list is probably not that different from the one the Machine Tools and Engineering Association's founders had in mind back in 1910. Where a major change has come, of course, is in the amount of—and importance of—that negotiation with Government departments. Generally increasing state intervention in industry, particularly over the past decade, has performed the MMTA a much more political animal than it was.

### Anxious

There is the general impingement on industry overall of Government tax and other economic and industrial policies, over which the machine tool industry, like others, is anxious to have a loud and clear voice. And there has been specific state involvement in machine tools—in the ailing and now nationalised Alfred Herbert group, for instance, or in the bringing together of the companies that now form Kearney and Trecker Marwin, or again in the various

industry aid schemes aimed specifically at machine tools.

As one MMTA official says: "In the early 1970s, involvement in politics—either with trade unions or the Government—virtually never happened. But in the last three years we have created an ongoing liaison with the House of Commons; we have established a lobby there—a situation that no one would have countenanced five or six years ago. Therefore we are increasingly becoming a politically-oriented body ourselves, perhaps like other organisations have had to be for far longer—the air industry, for instance, or, more recently, the motor industry. The MMTA is certainly a political animal: it never was before. We have now become so much more a public body, so much more political."

So, in short, the Association has had to expand its activities considerably, while continuing with such traditional functions as organising exhibitions and other promotional activity both at home and overseas. This, inevitably, has meant spending more, and doing so at a time when both its resources and those of its member companies are becoming more and more strained as the effects of inflation and the trade recession have taken their increasingly heavy toll.

It is this equation which is behind the close examination the MMTA is now having of its future. "No organisation can afford to stand still," is how the

MTTA puts it in its own promotional material. "The achievements of the past are not necessarily the keystone to future success. The Association, while learning from past experiences, is currently scrutinising its future direction in the light of current political, trading and economic pressures. The process is not easy for the way ahead is not always clear. Yet the readiness of the MMTA to take stock of the needs of the future is the sure sign of a healthy, virile and mature association."

Brave words, and true ones even if the difficulties might, perhaps, be greater than they suggest. What it comes down to is, perhaps, summed up by Mr George Trowbridge, the MMTA president, when he says: "We are talking about the ongoing change of emphasis in the various activities of the Association which is emphasised by increasing Government and quasi-Government involvement in the industry. Therefore, within the limited resources of the Association we are looking at how best to deploy staff in new circumstances."

The answers that are eventually found to the problems Mr Trowbridge's words sum up should be seen quite soon. Quite certain is that the decisions that have to be made are not easy ones. But they are decisions many another trade association is also faced with considering. And the MMTA starts from as strong a base as most, if not a stronger one.

David Walker

## Second-hand market starts to pick up

THE SECOND-HAND machine tool market appears to have followed the country's economic trend closely enough to instil some confidence in merchants who suffered severely during the recession. Nevertheless, there remain some dull areas and consequent problems.

It is likely that the economic trend will continue to be followed, and on that basis demand for second-hand machine tools should continue to pick up, but perhaps at a slower rate during the rest of the year than anticipated earlier.

The underlying factor which will determine the rise in demand is the ability of industry to buy machine tools; with high interest rates now prevailing, only major companies have the ability to increase capital expenditure on large new machine tools. Consequently the current demand for good second-hand products is expected to continue unabated.

But perhaps more important, the fortunes of smaller engineering companies, perhaps employing 100 or less people, have a strong bearing on demand. It is felt that when the economic recovery filters through to these companies it will be a strong boost to merchants.

A number of smaller merchants have reported similar though slightly different trends in the market, depending on their particular specialities. Axe Machine Tools of Milton Keynes, Bucks., has recently experienced strong demand from the Middle East in the form of one buyer placing a large single order.

It believes that the upsurge in demand earlier this year was largely attributable to restocking but suggests that their members' home sales of machine tools are split 50-50 between new and used products. Overseas, they are selling around 400 per cent more used machine tools than new ones.

On the question of exports, the association believes that overseas conventions of the type it holds are of value in providing contact with overseas buyers at a comparatively small cost when compared with individual sales drives by companies. Further, it is felt that the favourable exchange rates provide a good opportunity for the industry, which is estimated to be a net exporter of used machine tools.

There is now an underlying bias in favour of used machine tools, the association reports, and relatively speaking, home sales have been good in the past year when compared with late 1974 and early 1975. It is estimated that 13 to 15 per cent of total sales of used machine tools are now abroad.

However, its sales of new machine tools (which are part of its activities) have not been buoyant and the company expressed relief that it has had the second-hand market to help overcome the recent downturn.

Like others, Hatfield has also built up its second-hand stocks considerably, obviously straining cash flow, but turnover has remained stable at around £1m. a year. It reports good demand from the Middle East, from countries such as Saudi Arabia and the Trucial States, but demand for old products is so

slow that the company is unwilling to buy anything more than about 15 years old.

Although Hatfield Machine Tool believes there is great potential in exports, it has experienced problems in marketing. It points out that if only one machine of its type is available, the effort and time consumed in arranging documentation becomes barely worthwhile. In some cases the item could be sold domestically beforehand.

On that basis it is regarded as more satisfactory to sell to foreign customers visiting the U.K. and to advertise in relevant areas abroad in order to attract the customers.

Tollbridge Machine Tools of Basingstoke has also experienced good demand for high quality machine tools, but slower markets for the general range. This is attributed to the great expense and frequently long delivery dates on new products in the higher range. Foreign buyers are reported to have been consistent, although problems have been experienced in Far Eastern markets due to the dramatic rise in freight rates.

As in the past, the overall market for second-hand machine tools is difficult to judge in the absence of reliable sales figures, but the Association of European Machine Tool Merchants recently carried out a sample survey in an effort to clarify this.

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Looking at particular markets, the Middle East has provided a strong demand for heavier equipment and there is increasing emphasis in this area on more sophisticated machine tools, while demand for older products has fallen off quite sharply.

But the essence of demand for these products remains the company which requires a particular, often, quite specialised machine tool at short notice.

If manufacturers cannot supply it, the company must turn to merchants who can often meet the need with the minimum of delay.

The industry's strength is being close to their customers and knowing their requirements, a factor which has been stressed in discussions with Government on means of assisting the industry.

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# Eagle Star advances to £15.8m. at six months

ESTATE income for the half of 1976 at Eagle Star Insurance Company increased by 10 per cent to £14.8m. and, despite an underwriting loss of £1.1m. last time, pre-tax profits advanced from £12.5m. to £13.8m. The interim dividend is lifted a 2.5p to 2.75p net costing £1.1m. on capital increased by 10p to 1.15p. The directors expect to pay a maximum permitted for the year. Last year's final was 2.487p on the increased capital.

See Lex

	1975	1976
Income	12.5	14.8
Underwriting loss	0.5	1.1
Pre-tax profits	12.0	13.8
Dividend	2.487	2.75

he increase in investment income was achieved despite lower rates of interest on short-term deposits. This was not only by a strong cash position but also by the investment in the right issue proceeds and movements in exchange rates, or adjusting for the effects of rights issue and differing exchange rates investment income for the period increased by 21 per cent.

Details were given on May 26 the purchase of investment property from English Property Corporation which improved the value of the property content of the investment portfolio. The liquidity in the form of short-term deposits still remains high, members are told.

## Laurence Scott looks for record

At the annual meeting of Laurence Scott, Mr. P. M. Tapscott, the chairman, stated that the company had completed six months of the current year management accounts currently available showed that results in aggregate were close to budgets.

## Metalrax lower at halfway

ANNOUNCING a drop in pre-tax profit from £407,505 to £316,446 for the first-half of 1976, Mr. John Wardle, chairman of Metalrax (Holdings), forecasts a distinct improvement for the second half.

The net interim dividend is effectively raised from 0.40p to 0.44p a share. Last year's equivalent total was 1.013p from record pre-tax profits of £512,534.

Turnover is down from £3,351m. to £3,171m. at half-way. Tax takes £167,000, against £214,000 in 1975.

## Jentique downturn to £0.54m.

TURNOVER for the year to June 30, 1976 of Jentique (Holdings) increased from £7.3m. to £8.4m., while pre-tax profit fell from £1,082,890 to £539,082, after £11,670, against £320,400, at mid-way.

Earnings per 5p share for the year were down from 12.1p to 8.4p. A final dividend of 0.3084p lifts the total from 0.4924p to a maximum permitted 0.5347p net.



Mr. William Fraser, chairman of BICC.

## Midway advance for Wm. Morrison

FIRST HALF to July 31, 1976, company to increase sales and turnover of Wm. Morrison Supermarkets increased from £22.42m. to £28.03m., and the directors confidently expect to achieve a turnover in excess of £24m. for the year, against £48.83m. for the year to January 3, 1976.

Pre-tax profit for the half year advanced from £719,731 to £882,989. Last year's figure was £1,947,471. The improved first half figures reflect close control of expenditure, better utilisation of labour and increased profit margins.

# BICC profit tops £20m. at mid-term

IN THE first half of 1976 sales of BICC expanded from £373.8m. to £426.8m., and pre-tax profits advanced from £17.26m. to £20.58m.

After tax up from £7.66m. to £11.03m., and minorities of £3.09m. (£271m.) earnings are shown at 4.85p (£5.49p) per 50p share.

The chairman, Mr. W. Fraser, says that basic economic factors, particularly interest rates and the performance of sterling, are bound to play a part in determining the level of industrial activity in the U.K. in the coming months.

Neither of these factors is favourable at the moment but he believes that the crown's widespread overseas interests and the intensification of its direct export efforts should at least enable the maintenance of earnings in the second-half. Stated earnings for all of 1976 were 9.6p.

The interim dividend is held at 2.5p net on capital increased by the one-for-five rights issue in March. At that time a maintained total of 6.81p for the year was forecast.

## G. Scholes recovers to £1.33m.

TURNOVER of electrical engineering and manufacturing of "Wiles" electrical products, George H. Scholes and Co., increased from £3.37m. to £6.23m. in the year to June 30, 1976, and pre-tax profit recovered from £1,122,550 to £1,227,380. At half-way profit was up from £507,000 to £520,000.

Earnings per 25p share increased from 12.9p to 14.8p for the year, and the dividend is stepped up from 12.5p to 14.85p net with a final of 10.85p.

Tax at 25p is £1,000,000 (£1,000,000).

## Changes at Heywood Williams

In his annual report, the chairman of Heywood Williams Group, Mr. B. R. Scholes, tells members that action taken to strengthen management has included his resumption of the managing directorship allowing Mr. Ralph Birchcliffe, his deputy in consultation on the financial aspects of the business.

As a result the financial management and control throughout the group have been significantly improved, he says.

## Jas. Wilkes in sound position

In spite of difficult trading conditions, the financial position at James Wilkes is sound, reports chairman Mr. J. Wilkes in his interim statement.

While market conditions appear to have stabilised, there will be a period of time necessary to adjust and build back to a level of activity which will be profitable for the first half of 1977, he says.

As announced last week, pre-tax profit for the first half of 1976 dropped from £1.1m. to £0.13m.—all group activities de-

# You can't have a 150-year relationship without having a lot in common.

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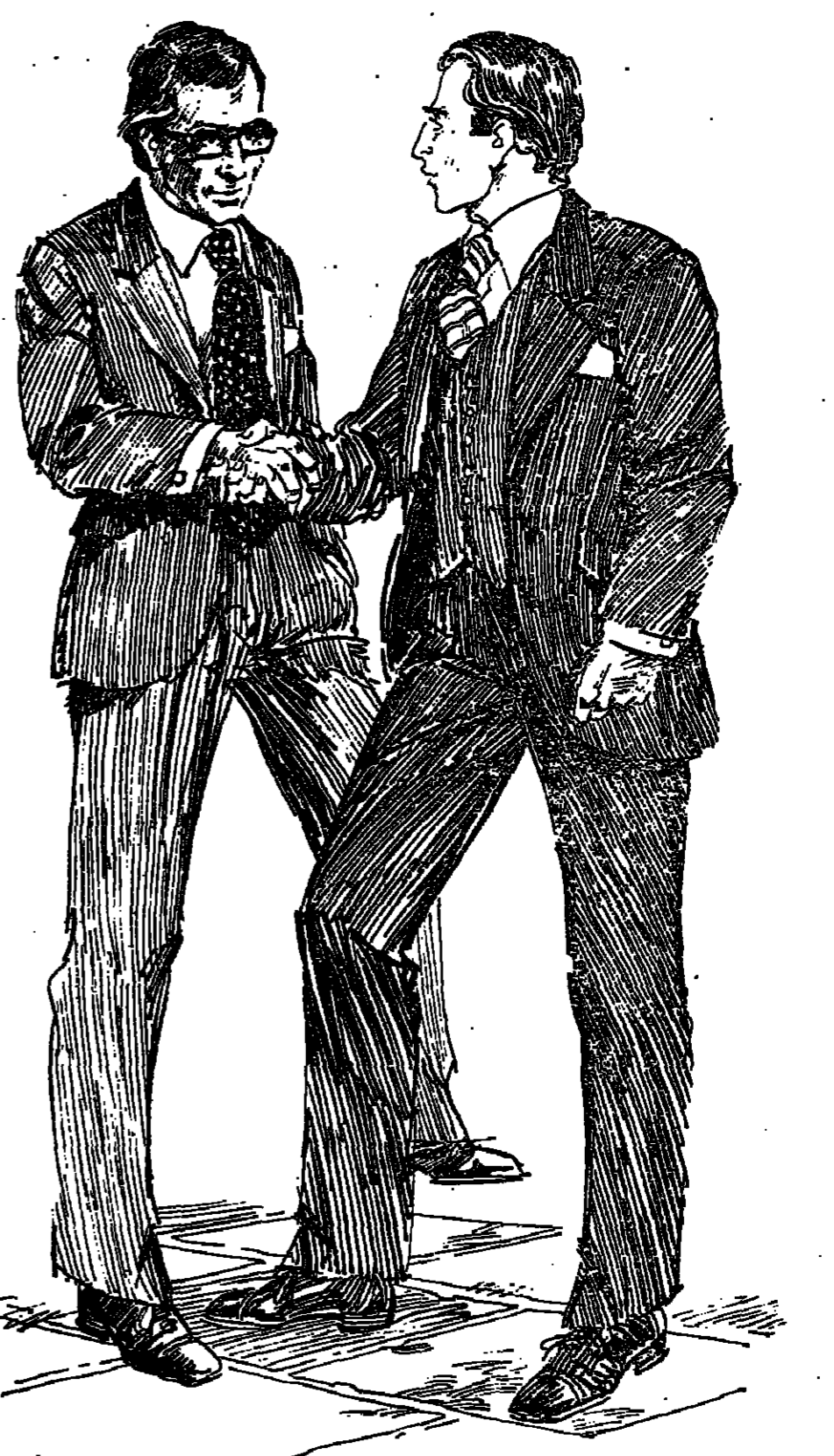
Both, for a start, are in the competitive business of maintaining meticulous standards of service to clients.

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## Law Land turns in £0.46m. half-time

FOR THE half-year to June 30, 1976, pre-tax profits of Law Land Company have jumped from £228,286 to £483,954. After tax and minorities and taking in a transfer of £81,000 (£250,000) from capital reserve in respect of development properties, the attributable balance emerges lower at £278,886 (£337,863). Earnings per share, including a transfer from capital reserve, are given as 0.33p, down from 1.09p.

An interim dividend of 1p (same) net per 20p share is declared. In the year 1975, the company made pre-tax profits of £630,036, up from £328,789, and paid dividends totalling 2.317p.

Extraordinary items for the half-year shown amounted to a net credit of £438,000 which has also been transferred to capital reserve, the directors report.

The directors state that sales of properties in Australia, including the North Ryde, Sydney, industrial site and the newly-developed, unlet office block in North Sydney have enabled a short-term Australian borrowing of £83m. to be repaid.

In Belgium, negotiations for the sale of the industrial site at Diegem, near Brussels, are at an advanced stage; the directors report, and in the U.K. a firm, short-term bank loan has been repaid.

Lettings of new office and industrial accommodation have been achieved which will produce additional income of £200,000 per annum, say the directors. The main benefits will be reflected in the 1977 accounts. Other negotiations are in hand, independent valuations of the group's properties are in course of preparation.

A change has been made in the basis of accounting for the conversion of foreign currencies, the

## MINING NEWS

### A Canadian view of uranium

BY KENNETH MARSTON, MINING EDITOR

THE former president of the Canadian Government's Eldorado Nuclear, Mr. William Gilchrist, reckons that current demand for uranium is increasing by some 18 to 22 per cent. a year, "which is the greatest expansion in demand any base metal has ever experienced."

Pointing out that it can take from four to 10 years from an initial discovery to reach the production stage of a mine, he said that last year's Western world production of uranium oxide was about 25,000 tonnes while some 70,000 tonnes will be needed by 1980 and perhaps 125,000 to 150,000 tonnes by 1985, which is really to-morrow by mining standards.

This, he added, will call for a major effort in exploration and development. Mr. Gilchrist, a director of Canada's Madawaska Mines was speaking at the official opening of the latter's mill-concentrator complex at Bancroft, Ontario.

The re-opened mine, which is 31 per cent.-owned by the U.S. Federal Resources Corporation and 49 per cent. by Consolidated Canadian Faraday, is to supply uranium to the Italian Government agency AGIP at world prices less 5 per cent.

Mining industry representatives attending pointed out that Canada's potential contribution to uranium supply was being hindered by slackening exploration. Government interference and lack of incentives. However, Mr. Gilchrist is also on the Board of the Northgate Exploration group's associated Westfield Minerals, companies which have substantial uranium exploration projects on hand.

### BHP presses on at Deepdale

DESIGN WORK at the Deepdale iron ore deposit in Western Australia is being pushed ahead, the chairman of Broken Hill Proprietary, Sir Ian McLennan, told the annual meeting in Melbourne yesterday. BHP owns the deposit and is seeking orders from Japanese steel mills.

"The starting point for this development will be related to the increased demand requirements of the world steel industry," Sir Ian added.

It is hoped to start production in 1978 at the rate of 3m. tonnes a year, rising to 15m. tonnes in three years. Of this latter figure, about 6m. tonnes would be available for Japan's Last April Nippon Steel disclosed that BHP had asked for a reply by this month on proposals to sell iron ore.

Deepdale is one of three major new Western Australian iron ore projects seeking not only Japanese orders but also Japanese equity participation. The others are Marandoo, run by Texas Gulf and Hancock Wright, and Goldsworthy C, which is presently subject to a restructuring organised by Consolidated Gold Fields.

Meanwhile, BHP has just completed a major expansion project at the Mount Newman iron ore development. Sir Ian told shareholders that this lifts production capacity to 40m. tonnes from 35m. tonnes.

Turning to copper developments, Sir Ian said that BHP had reached agreement with two foreign companies on the formation of a consortium to make further studies of the Ok Tedi copper prospect in Papua New Guinea. The agreement has come in time to beat the deadline, at the end of this month, imposed by the PNG Government for the formation of a consortium.

The companies involved are Mount Fubian Development, a subsidiary of Amoco Minerals, which is part of the Standard Oil (Indiana) group, and a German concern, Kupfererzbergbau Gesellschaft. The German company brings together, in a joint venture, Metallgesellschaft, Siemens, Deussa and Kabel und Metallwerke Gütchhoffshausette.

The study at Ok Tedi was originally planned to start next month. Drilling to provide an estimate of reserves in excess of the 150m. tonnes already established was completed last April. BHP were 77p yesterday.

### JAPAN CAUTIOUS ON USSR COPPER

The Soviet Union has revived a proposal for Japan to develop the big Udokan copper deposits in Siberia, sources close to the Federation of Economic Organisation (Keidanren) said in Tokyo. The matter was apparently raised in talks last month.

The Japanese copper industry is said to be very cautious about the suggestion. Large supplies of Government funds could not be expected and the cost of development would be much higher than the estimates of \$1.6bn. (£922m.) calculated when the project was first mooted under joint co-operation plans ten years ago. At the same time the industry is already involved in copper mining plans in Peru and Africa.

### TANGANYIKA CONCESSIONS

Failure to find a quorum has caused the general meeting of Tanganyika Concessions preference share holders to be adjourned from Monday to September 27.



### Metaltrax (Holdings) Limited

Storage and materials handling systems  
repetition engineering; metal fabrications;  
engineering services

### Interim results

	1976	1975
6 months to June 30	£	£
Turnover	3,170,197	3,351,029
Group profit before taxation	316,446	407,505
Group profit after taxation	149,446	193,505

Arclath Road, Kings Norton, Birmingham B38 9PN 021-458 6571

## BIDS AND DEALS

### Newman-Agar Cross terms agreed

Negotiations for the long-awaited bid by Newman Industries for the Agar Cross electrical concern, in which it already has a considerable stake, have been completed and agreed bid terms were announced yesterday. The offer, extending to two classes of Preferred stock which it is desired to buy out to consolidate the equity, value the capital Agar, which has incurred losses in several of the past few years, but which returned a net profit of £155,000 for 1975-76, at some £680,000. Dividends on the Preferred stock are more than 12 years in arrears.

Newman, for which Guinness Mahon is acting, is offering 43 of its own shares, quoted at 10p last night, for every 100 in Agar, valuing the latter at just over 19p, compared with a closing price of 19p. 3p higher.

For every £100 of 4.9 per cent. Cumulative Preferred stock in Agar, Newman offers 55 new £1 10 per cent. Cumulative Preference shares and 80 Ordinary shares, valuing this stock at some 81p per £1 nominal; the price closed 14p up at 88p.

The offer for the 3.6 per cent. Second Cumulative Preferred stock is 60 Newman £1 10 per cent. Cumulative Preference shares and 80 Ordinary shares for every £100 of stock. This stock, valued at some 64p for £1, ended 1p down at 64p yesterday.

Newman has holdings which at present entitle it to 25.2 per cent. of the votes which can be cast at Agar annual meetings. They consist of 223,198 Ordinary shares, £49,200 of 4.9 per cent. Cumulative Preferred stock and £20,000 of 3.6 per cent. Second Cumulative Preferred stock.

The Boards of Agar Cross and of Charterhouse Japhet who are acting as independent advisers to the transaction, consider the terms fair and reasonable and recommend them. Mr. Alan Bartlett is chairman of both companies.

The offers are subject to a number of conditions, including acceptances being received from a majority representing not less than 75 per cent. by number of each class of holders of the Cumulative Preferred stock, the Second Cumulative Preferred stock and the Ordinary shares. This must also amount to not less than 90 per cent. of each class or such lesser percentage as Newman may decide, being 30 per cent. of the Ordinary shares and being stock carrying more than 50 per cent. of the voting rights in Agar.

Newman has recently purchased a major share block in the pottery concern Alfred Clough, raising its holding in that company to more than 90 per cent. Mr. Bartlett is also becoming chairman of Clough.

### APV/HALL THERMOTANK

Details of the Convertible Loan Stock which will form part of the consideration in APV Holdings' agreed £11.4m. bid for Hall-Thermotank, were issued with the announcement of the offer last night. Terms, as reported on page 1, are one APV Ordinary share and 27.3 nominal of a new 10.75 per cent. Convertible Unsecured Loan Stock 1997-2002 for every six H-T shares.

The Convertible Unsecured Loan Stock will be convertible into APV Ordinary shares in each of the years 1982 to 1997 on the basis of one Ordinary share for £2.80 nominal of stock.

Accepting H-T holders will be permitted to retain a special interim dividend of 0.8825p per share net in respect of the year ended September 30, 1976, payable on January 31, 1977.

Discussions are in progress about H-T's 4.9 per cent. £1 cumulative Preference shares which may lead to either an exchange for APV Preference shares or a cash offer.

S. G. Warburg is acting for APV, while H-T is advised by Noble Grossart.

### ODEON (IRELAND)

The recommended offers on behalf of Odeon Ireland for the Ordinary and Preference shares of Irish Cinemas will remain open for further acceptances, until further notice.

Acceptances of the offer for the Ordinary shares have been received in respect of 180,610 shares which amount to 78.73 per cent. of the Ordinary shares of Irish Cinemas, the subject of the offer. Prior to the offer, Odeon Ireland already owned 1,237,286 Ordinary shares in Irish Cinemas—about 84 per cent. of the total Ordinary capital.

Acceptances of the offer for the Preference shares of Irish Cinemas have been received in respect of 142,067 which amount to 71.04 per cent. of the total Preference capital.

### SHARE STAKES

Unochrome International—Jorehaut Holdings has purchased a further 25,000 Ordinary shares bringing its aggregate holding up to 3.51m. shares.

JCEC—Manchester Nominees (AB Account) has purchased a further 65,000 Ordinary shares, bringing its total holding to 410,500 shares (24.4 per cent.).

LEP Group—Trustees of a settle-

### Results in brief

PHOTOPIA INTERNATIONAL (timbers and distributors in photographic audio and electronic trades)—Results year to April 20, 1976, already known. Fixed assets £230,130. Net assets £1,544,885 (£1,213,917). Chairman, "reasonably confident" that this year will be a better one. Meeting, Stoke-on-Trent, October 14, 2.30 p.m.

SINGLO HOLDINGS—Results year to March 31, 1976, already known. Fixed assets £1,702,102 (£1,658,807). Current assets £1,702,102 (£1,658,807)—bank and cash balance £17,408 (£1,441). Current liabilities £971,815 (£716,618). Net assets £1,232,289 (£1,242,189). Substantial part of proceeds of November's rights issue were invested in Bangladesh Holdings, which is currently trading at a very satisfactory level. Fieldsman Properties, acquired in January, currently trading profitably. Further acquisitions expected. Repay subsidiary to be established in India in 1977-78. Permission being sought from Indian Government to remit profits from 1974-75 and earlier years to this country. This would permit payment of 1974-75 dividend. Preference dividends for 1974-75. Meeting, Liverpool, Middlefield, October 14, 11 a.m.

## Record £2.71m. by John Haggas

ON TURNOVER up from £13.65m. months results of the Furness Group, acquired at end 1975, worsted spinners, John Haggas advanced from £2.14m. to a record £2.71m. for the year to June 30, 1976, after a rise from 20.91m. to £1.2m. in the first half.

Earnings are shown at 33.81p (41.89p) per 10p share and the dividend is lifted from 2.77p to 3.02p net (the maximum permitted 3.02p net with a final 0.25p).

The directors say the level of activity is gradually improving in all areas of the business, and they are more than usually confident that the current year's profit will again be higher.

Profits were struck after depreciation of £389,000 (£353,000) but before tax of £1,411,000 (£1,135,000) and profits on the sale of Government securities of £801,000 (loss £318,000).

Profits before tax: 1976 £1,411,000, 1975 £1,135,000. Taxation: 1976 £389,000, 1975 £353,000. Profit before tax: 1976 £1,022,000, 1975 £782,000. Dividend: 1976 3.02p, 1975 2.77p. Ordinary income: 1976 15,004, 1975 14,423.

comment John Haggas's investment income nearly doubled to some £740,000, nearly a major contribution to the 30 per cent. pre-tax profits increase for the year following a 38 per cent. boost in the final quarter. The chairman has argued his case publicly for limiting new investment within the group in favour of accumulating investment in gilts (currently amounting to more than £51m. against a previous £27m.) and the market has clearly been impressed by the results. The shares rose 25p yesterday to 303p, reducing the yield to just 14 per cent., covered nearly 18 times. Without non-trading income, pre-tax profits were still 13 per cent. higher, helped by a measure of recovery in the fur and knitting divisions. The spinning side meanwhile continues to work at almost doubled export market now contributing around 15 per cent. of total sales. The p.e. of 3.8 compares with a textile sector average of 10.3.

Bandanga profit growth Group pre-tax profit of Bandanga Holdings increased from £61,044 to £80,200 in the half year to March 31, 1976. The figures incorporate three months results of the Furness Group, acquired at end 1975, worsted spinners, John Haggas advanced from £2.14m. to a record £2.71m. for the year to June 30, 1976, after a rise from 20.91m. to £1.2m. in the first half.



## SUMMARY OF GROUP RESULTS Half Year to 30th June 1976 (based on unaudited figures)

	June 1976	June 1975	Year 1975
GROUP SALES	£m	£m	£m
	426.8	375.3	758.1
OPERATING PROFIT	25,600	22,964	43,425
FINANCE CHARGES	4,772	5,690	11,160
PRE-TAX PROFIT	20,828	17,264	32,265
TAXATION	11,031	7,684	14,024
AFTER-TAX PROFIT	9,797	9,600	18,241
PROFIT ATTRIBUTABLE TO HOLDING COMPANY before Extraordinary Items	6,703	6,583	12,181
EARNINGS PER ORDINARY SHARE before Extraordinary Items	4.85p*	5.49p*	9.66p*

\*Based on the weighted average number of shares adjusted for the bonus element of the Rights Issue.

### Statement by

The Chairman, Mr. William Fraser, C.B.E.

### RESULTS

The salient features with comparisons for the corresponding period in 1975, are as follows:—

Sales at £427 million are 14% up, the increase being due to higher prices of copper and other costs and not to any increase in the level of activity. Export Sales at £22 million show an increase of 20%. Taxation at £11.0 million has increased substantially due, not only to writing off £0.7 million Advance Corporation Tax, but also as a result of unrelieved losses overseas. Profit Attributable to Holding Company, before Extraordinary Items was marginally down at £6.7 million but showed a 28% increase over the second half of last year. The Number of Issued Ordinary Shares has increased during this half year from 118.1 million to 143.2 million due mainly to the Rights Issue of 2.25p net per ordinary share (the same level as in 1975) which will be payable on 4th January 1977 to ordinary shareholders registered in the books of the Company on 8th November 1976.

### INTERIM DIVIDEND

At the time the Rights Issue was announced it was stated that "the Directors expect, in the absence of unforeseen circumstances, to recommend a maintained rate of total dividend for the year to 31st December 1976, amounting to 6.61p net per ordinary share on the share capital of the Company as increased by the Rights Issue". Your Directors have declared an Interim Dividend of 2.25p net per ordinary share (the same level as in 1975) which will be payable on 4th January 1977 to ordinary shareholders registered in the books of the Company on 8th November 1976.

### ANALYSIS OF RESULTS BETWEEN THE FOUR GROUP COMPANIES

Balfour Beatty's sales and profits for the half-year were a considerable improvement on the corresponding period in 1975. Any contracting activity involves some degree of risk, but particular attention is now being directed to avoiding large open-ended contracts.

BICC Cables' pre-tax profit is marginally better, but there has been no real improvement in the U.K. demand. Fortunately the Company has a firm foothold in many export markets and they are determined to improve this position still further.

BICC Industrial Products continues to develop the Group's business in non-cable-making fields and although volume did not increase, profits show an improvement on both the previous half-years. This Company has considerable flexibility of operation which enables it to benefit from specific opportunities, even if there is no general up-turn in U.K. industrial activity.

On the international side, first-half profits held up well considering the relatively low level of activity in almost all parts of the world. Even during a general recession in world trade many of the countries in which we operate have large unsatisfied domestic markets which should keep the overseas factories concerned busy in the second half of 1976.

### THE BOARD

As I have now reached the age of 65 I will be retiring as Chairman of the Board and from the Boards of subsidiary companies, with effect from 31st December, 1976. I will, however, not be completely severing my association with the Company as the Board have asked me to continue to be available on a consultative basis for a period of three years.

I will be succeeded as Chairman by Mr. C. H. Broughton Pipkin, who is at present a Deputy Chairman and Chief Executive. The office of Chief Executive will cease but Mr. Pipkin will continue to be a full-time executive of the Company.

### THE OUTLOOK

Basic economic factors, particularly the going rate of interest and the performance of sterling, are bound to play a part in determining the level of industrial activity in this country in the coming months. Neither of these factors is favourable at the moment. Nevertheless, I believe that our widespread overseas interests and the intensification of our direct export efforts should at least enable us to maintain our earnings in the second half.

**BICC Limited** 21, Bloomsbury Street, London, WC1B 3QN

## Eagle Star Half-year figures

### Dividend

The Directors announce the distribution of an interim dividend for 1976 of 2.75p per share (1975 2.5p) which, with the addition of a tax credit of 1.4807p per share available to eligible shareholders, is equivalent to a "gross" dividend of 4.2307p per share (1975 3.8461p "gross" per share).

### Estimated Half-Yearly Results

Premium income, excluding life, has increased by 25 per cent. Estimated and unaudited results for the six months ended 30th June 1976 together with comparable figures for the first half year of 1975 and those for the full year 1975 are shown below. It should again be stressed that results at the half year cannot be taken as providing a reliable indication of those for the full year.

	Estimated six months to 30th June 1976	1975	Actual Year 1975
	£m	£m	£m
Premium income (excluding life)	130.4	104.4	201.0
Investment income	14.6	10.5	22.6
Groewood Securities*	2.4	0.7	2.6
Share of associated companies' profits	0.5	0.5	0.8
Underwriting	(2.4)	0.1	(2.7)
Shareholders' life profits	3.1	2.7	6.2
	18.2	14.5	29.5
Less contributions to pension funds etc.	(2.4)	(1.6)	(3.5)
Surplus before taxation and minority interests	15.8	12.9	26.0

\*Acquired during 1975.

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# Flying radar for Europe

By MICHAEL DONNE, Aerospace Correspondent

BOEING OF the U.S. is expected to submit to Nato its latest proposals to supply Western Europe with a permanent radar umbrella, covering the whole of the area from the North Cape of Norway to the Eastern Mediterranean, including the U.K. Air Defence Region and the Eastern Atlantic. It would be the Airborne Warning and Control System (AWACS), designed especially to meet the requirements of the growing strategic defence concept of Airborne Early Warning (AEW). The system would be provided by a fleet of up to 32 Boeing 707 four-engined jets, specially modified to carry out radar surveillance, detection and tracking of hostile aircraft and missile targets, at great heights and for long periods. Coupled with a weapons-control and data transmission system aboard each aircraft, AWACS would also be able to direct defending air and ground forces towards the attacking aircraft and missiles.

## Electronics

The aim of the AEW concept is to supplement, and not replace, the existing expensive and complex ground-based warning systems, such as the Nato Air Defence Ground Environment (Nadg) — a recently completed chain of high-performance radar stations guarding the frontiers of Nato — and the older Ballistic Missile Early Warning System

(BMEWS). Ground-based systems are best for the detection and tracking of high-flying targets, but tend to leave uncovered the many significant "penetration routes" that can be used by low-flying aircraft. This is especially the case in Western Europe, with its varied terrain of mountains, deep valleys, rolling hills, jagged coastlines, and extensive plains. To close this gap the concept of Airborne Early Warning (AEW) has been evolving over recent years. The idea is that a number of high-flying aircraft—enough for effective permanent coverage of the whole area—fitted with special radars and other devices, could look down on to low-flying targets, detecting them from great distances. The higher the AEW aircraft can fly, the greater the range of their radars. The information can then be fed into existing ground-based warning systems. By also serving as weapons-control system in their own right, the AEW aircraft could direct defending aircraft and missiles onto the targets more quickly perhaps than the ground-based systems.

AWACS is a specialist system designed by Boeing and the U.S. Air Force. Basically, it is built round a modified Boeing

707, called E-3A, into which is fitted, instead of passenger seats, a complex system of electronics capable of handling detection, tracking, data transmission, together with necessary catering and other facilities for the crew during the many hours the aircraft is in flight. The aircraft itself is distinguished by its massive 30-foot diameter radome, housing the Westinghouse downward-looking radar, mounted like a flat mushroom-head on stilts above the fuselage to give 360-degrees coverage.

The USAF has ordered 27 E-3As for its own AWACS fleet, deliveries to start next year. This will be enough aircraft to permit a permanent and complete airborne coverage of the U.S. coastlines, allowing for aircraft on the ground for maintenance, stand-by, crew resting, and emergencies.

In Europe, Nato has several options. It can buy the U.S. E-3A AWACS system — which is what the U.S. wants it to do. A fleet of up to 32 aircraft, providing a permanent umbrella over the whole of the Nato European area, would cost about \$2.2bn, of which about \$1.6bn. would be the cost of the aircraft (at about \$45m. each), and the rest for necessary infrastructure, including ground support, training and initial introductory costs, such as tooling.

Other options include either building an entirely new AEW aircraft — probably ruled out on grounds of cost, which would be prohibitive for the comparatively small number of aircraft involved — or converting an existing aircraft for the task, which would also be costly. The Hawker Siddeley Nimrod has been mentioned as a possible candidate for the AEW role, and there is no doubt that the RAF would like to have a replacement for its ageing Shackleton aircraft which have filled this role around Britain's shores for several years.

## Nimrod

However, the Nimrod, developed from the Comet jet airliner, is an anti-submarine warfare aircraft, and although it has the long-endurance qualities for an AEW aircraft, it would still need extensive modification, primarily involving a new electronics package and a new downward-looking radar. This is well within the technological capabilities of the British and West European aerospace and electronics industries, but it would be expensive.

Boeing is arguing that by buying the E-3A Europe will be getting a mature system, involving lower risk and cost. Its latest proposals, moreover, will include a high measure of industrial collaboration.

Just who will do what work on the E-3A, if it is bought for Europe, remains to be seen. But clearly British and West German aerospace and electronics industries could expect a considerable share since they are likely to be among the biggest contributors to the cost of buying the system.

At the Farnborough International Air Show recently, Boeing made clear that its proposals remain flexible. For example, while France is not a military partner in Nato, the possibility of using the Franco-U.S. Smeema-General Electric CFM-56 "new-technology" engines remains an option to be considered, although it is also stressed that the E-3A does not need new engines to perform a European mission.

For Britain, the position is delicate. It already has Nimrod, but as a major Nato partner Britain has to go along with a Nato Ministerial decision, and if this is in favour of AWACS there seems little doubt that Britain will make a powerful bid for as much of the work as it can.

If Nato rejects AWACS and also sets itself against any other AEW aircraft, Britain would

still need something to replace the Shackleton for AEW coverage over the Eastern Atlantic and the U.K. Air Defence Region itself, where there are frequent incursions by Soviet long-range reconnaissance aircraft. This implies that the U.K. would then have to consider whether or not to modify Nimrod for the AEW role, bearing the cost alone.

There have also been suggestions that some countries in Western Europe may seek other trade-offs for any financial commitment to AWACS. West Germany, for example, has been reported to be thinking of seeking a U.S. deal on the Leopard main battle tank as part of its price for participating in AWACS, but the U.S. is certainly treating the two as separate issues.

Until the final Boeing proposals have been submitted, and considered by Nato, there are no clear answers to the many questions surrounding the whole future of the AEW concept in Europe. All that seems to be clear at this time is that the AEW problem in general and AWACS in particular as a solution to it, could become even more controversial in the months ahead.



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Fri. 7.30. Sat. 8.30. Sun. 8.30.

### THEATRES

**ADELPHI THEATRE** 01-836 7611.  
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### THEATRES

**RAVENSHEAD THEATRE** 73.  
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Fri. 7.30. Sat. 8.30. Sun. 8.30.

### CINEMAS

**ABC & 2, WHITFIELD AVE** 34 84.  
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40110150

The Babcock bid for Herbert Morris raises difficult questions of principle.

# Tough nut for the fair trade office

BY GEOFFREY OWEN

Weeks after the con-sy over the Tate and Lyle or Manbré and Garion i. in most people's se, was not referred to the of Fair Trading and the nment face another ally awkward merger on over the future control rbert Morris, the Lough-b-based crane manufac-

Amalgamated Indus-trials, which had held 37.7 mt. of the Morris equity id been told by the Mono-Commission to reduce its gs. to 10 per cent. need that it had sold its stake to Babcock and at 120p per share. k, in turn, announced its on of bidding for the rest Herbert Morris shares at ne price, in accordance he rules of the City Code e-overs and Mergers. The on for the Government is er this partial sharehold- a proposed merger should rred to the Monopolies ision.

## Bryanston

In 1972 Bryanston Finance took control of Smith, bought out the Pacific holding, and re-named the company Amalgamated Industrials. Two Bryanston representatives, Mr. A. T. Smith and Mr. P. C. Hoard, went on to the Herbert Morris Board.

Since then a number of share transactions have taken place, ending in November 1975 with a full bid by AI for Herbert Morris, which was referred to the Monopolies Commission. In the meantime AI's parent, Bryanston Finance, had become the subject of a Department of Trade investigation under Section 144 of the Companies Act: that investigation is still in progress.

The main reason for the reference of the AI bid was the concern of the Office of Fair Trading that the bidding company had nothing significant to offer Herbert Morris and that, on the contrary, control by AI might tend to disrupt the efforts which the Morris management was making to improve the company's performance. That contention was confirmed by the Monopolies Commission itself which reported in May of this year.

The Commission was not impressed by AI's claim that it regards the future of the Morris management and would

bring its financial expertise to bear on the company's financial problems. In the Commission's view, the improvement in Morris' recent results was mainly due to the management recruited by the present chairman and managing director (Mr. P. W. Robinson and Mr. E. P. McTighe) "much, if not all, of this improvement would have happened without any contribution from AI," the Commission said.

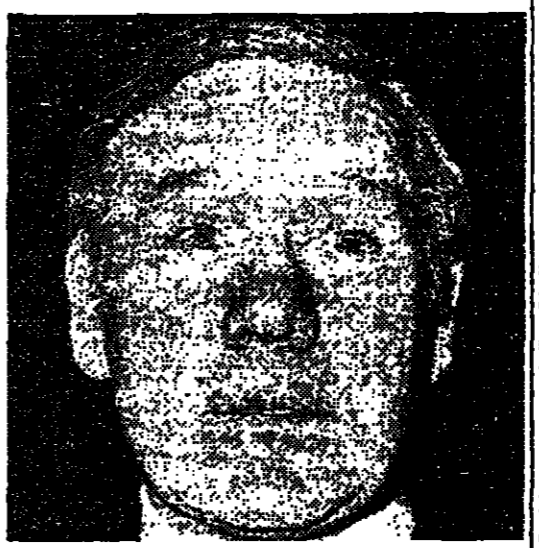
The Commission found AI's description of how it handled relations with its subsidiaries "difficult to relate to the past record of AI which appears to have bought and sold subsidiaries with regard mainly to the immediate financial interests of the group." The Commission found it impossible to ignore the widespread distrust of Mr. A. T. Smith and Mr. P. C. Hoard which stems from an impression that in their business dealings they are interested primarily in making quick financial gains.

The Commission recommended that the merger should not be permitted and that the shareholding of AI and its associates in Morris should be reduced to not more than 10 per cent. At the same time the Commission foresaw the possibility that if AI decided to dispose of its shares in one parcel, a fresh merger situation might be created, since the shares might be bought by another group seeking to control Morris.

"It may be," the Commission said, "that the shares could be placed with financial institutions, insurance companies, unit trusts and pension funds." Although this was not a firm recommendation—in any case the Government has no powers to force a company to dispose of an investment of this sort in a particular way—it was implicit in the Commission's remarks that the continued independence of Herbert Morris should, if possible, be safeguarded in whatever arrangements were made to dispose of the AI shares.



The chairman: Mr. P. W. Robinson, of Herbert Morris (left), and Mr. John L. King, Babcock



further than the Commission asked in selling all of its shares, but has ignored the suggestion that the shares might be placed with institutions. There is nothing the Government can do about that—presumably AI reckoned that it could get a better price from Babcock than by placing the shares elsewhere. But another merger situation has been created and the independence of Morris is threatened once again. The Office of Fair Trading now has to start discussions with the parties to see if this new merger should be referred to the Monopolies Commission.

Clearly Babcock is a very different proposition from AI. It is a large company with considerable engineering know-how in fields related to that of Herbert Morris. Its management is generally regarded as good, and it can point to a record of taking over engineering companies similar to Morris, respecting their independence, and encouraging the existing management to develop the business under the Babcock umbrella. Although Babcock's recently acquired U.S. subsidiary, American Chain and Cable, has products which are complementary to those of Morris, no question of rationalisation or factory closures arises in this case. Babcock argues

that the merger will enable the Morris management to carry on as it has been doing, but in a safe and stable environment.

The question that the directors of Morris have to ask themselves is whether the contribution from Babcock is sufficiently great to offset what they may see as the disadvantages of being swallowed up by a large group and of losing their independence. If they continue to fight the bid, they will presumably have to argue that the long-term interests of the business, including shareholders, management and employees, will be better served by staying independent.

## Employees

The Office of Fair Trading, in deciding whether or not to recommend to the Secretary of State that the merger should be referred, has to concentrate primarily on any possible detriment to the public interest if the merger goes through.

A great deal will depend on the attitude of the Herbert Morris management and perhaps that of the employees. If they are not convinced by the rationale of the Babcock bid, and if they decide to make a fight of it, it may carry some weight with the OPT.

battle against an unwelcome take-over offer from Tarmac in 1973 ended with a reference to the Commission and Tarmac's subsequent decision to drop the bid. It was a classic case of a defending company using every available form of political and industrial pressure to thwart the take-over. Whether the Morris directors will feel as strongly about the Babcock approach—and whether they make an effective case against it—remains to be seen.

There are grounds for arguing that the absorption of medium-sized companies like Morris into the arms of large groups like Babcock, GKN and Tube Investments is bad for the health of the economy, since it reduces the number of independent centres of initiative. Merger controls in their present form have not prevented the continuing trend towards greater industrial concentration. But the need to preserve the separate existence of small and medium-sized companies, as an end in itself, plays no role in British legislation on competition, and public concern about concentration has not yet reached the point where the law is likely to be changed. Thus the discussions over the next few weeks will be concerned with what specific damage, if any, might result from the Morris-Babcock merger, not whether the merger is "right" in the sense of conforming to some ideal view about how industry should be organised.

## APPOINTMENTS

### Broughton Pipkin to head BICC

Mr. C. H. Broughton Pipkin, 220 and has been a director since 1962.

Mr. John E. Hall has been appointed to the Board of EUROPEAN BRAZILIAN BANK, replacing Mr. R. B. Botcherby.

Mr. Reg Bovall has been appointed chairman and managing director of LINDAN PRESS, part of the Harrington-Prichard Group. Mrs. Josephine Cunningham-Prichard and Mr. Hugh Radkin have joined the Board.

Mr. A. P. Humphries, senior partner of Baker Sutton and Co., has joined the Board of HOUSE OF FRASER in a non-executive capacity.

Mr. Wilfred Rudd has retired as technical director of LCP (TRIM), a subsidiary of the LCP Holdings Group, but remains as a consultant.

Mr. Denis Dowling, formerly president of the Earl Beuch Company of Baltimore, U.S., has been appointed managing director of the new technical engines division of MARLING INDUSTRIES.

Mr. David Gates has been appointed a director and Mr. Michael A. Neother, an assistant director, of BANKERS' TRUST INTERNATIONAL. Mr. Roland Pozzka and Mr. Henry Hodgson have been made managers of the company, which is the merchant bank subsidiary of Bankers Trust Company, New York.

Mr. S. W. Turner, until recently senior partner of Turner Lapsden Hall, has been appointed a non-executive director of GLENGATE PROPERTIES. He will remain a consultant to his former firm.

Mr. Stanley Cressley has been appointed a director of CHIFA INTERNATIONAL with responsibilities for personnel and public relations in the group.

Mr. Stuart G. Errington, joint deputy managing director of Mercantile Credit Company, has been appointed chairman of the EQUIPMENT LEASING ASSOCIATION. He succeeds Mr. Geoffrey Dods-worth, M.P., who has completed his two-year term of office. Mr. T. M. Clark, director and chief manager of Lloyds Leasing, has become vice-chairman of the Association in succession to Mr. Errington.

Mr. R. G. White has relinquished the chairmanship of EKMAN CLEAVE but continues as managing director. Mr. Leslie C. Young, group managing director of J. Ribbe and Sons, has joined the Board of Ekman Cleave as chairman.

Mr. Donald S. Boyd has been appointed a director of UNIGATE DAIRIES from October 1.

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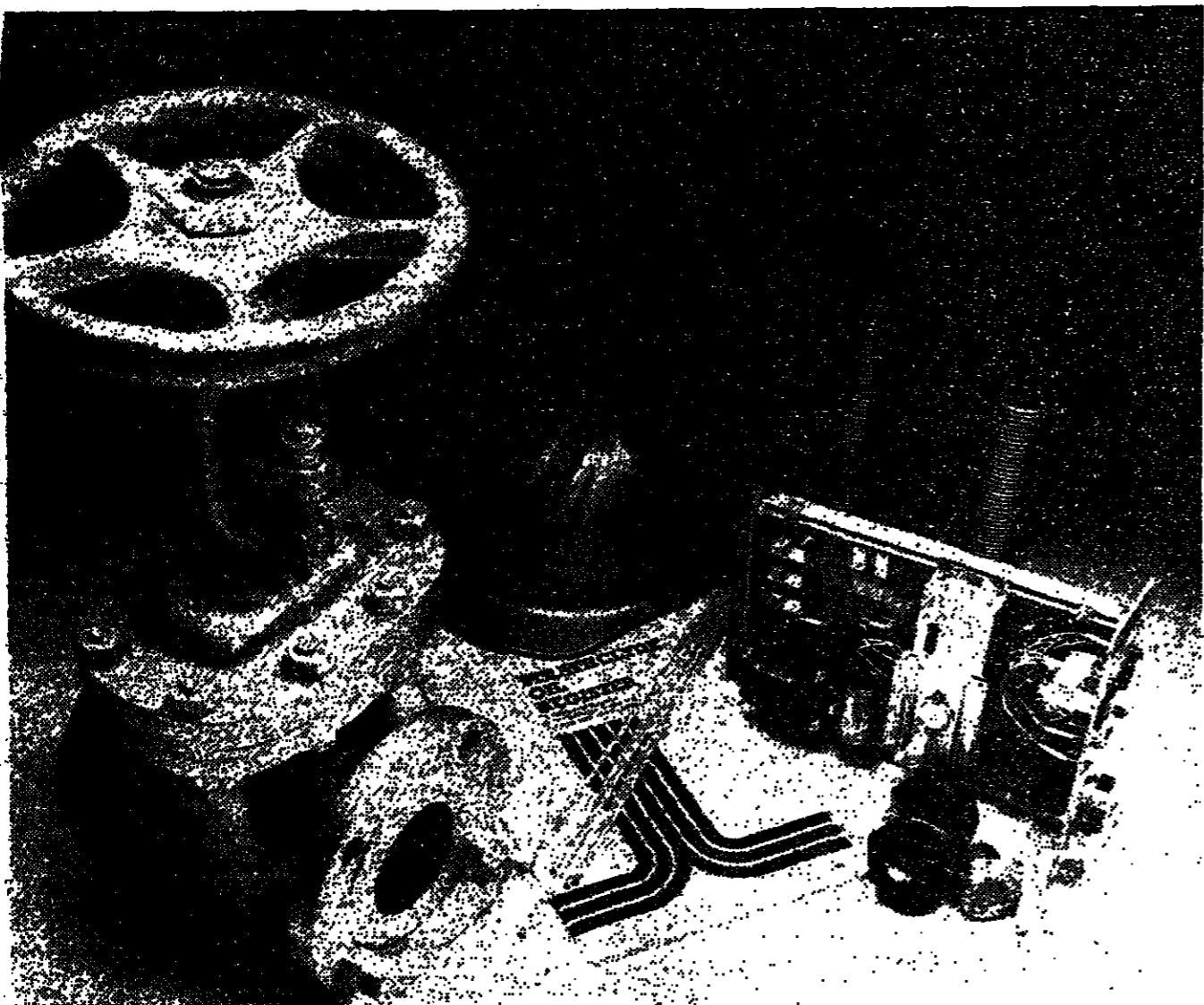
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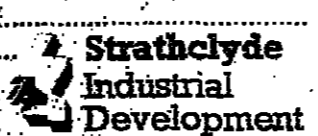
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## FINANCIAL TIMES REPORT

Wednesday September 22 1976

## Italian Textile Machinery

Textile machinery is one of the most important sectors of the Italian engineering industry. Major efforts have been made to combat the effects of recession and there are signs that these may be paying off.

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port was written  
by DAVID

IE Italian textile industry the past have brought some last year's major ay now be bearing t. The International Machinery Exhibition held regularly in a European centre once years, took place in 1 October, and with visitors proved to be st so far in terms of if not orders.

Italian producers are ring that with the xtile industry picking from recession even hat slowly, contracts ing the exhibition are ewed. Business in the months of this year, in a report presented uepan partners by the Italian Association e Machinery Manufac up on the depressed the same period last a further improvement for.

ese forecasts prove

correct it will come as a substantial relief to the Italian textile machinery industry which ranks among the most important of the Italian engineering sectors, exporting 73 per cent. of its output and earning a trade surplus for the Italian balance of payments. Total exports have grown from lire 140bn. in 1972 to lire 290bn. in 1975, though the decline in the value of the lira—down more than 20 per cent. against the dollar since the end of 1973 alone—means there has been a much smaller increase in volume of sales. Imports, again affected by devaluation, have increased over the same period from lire 94bn. to lire 170bn.

Concentrated in Northern and central Italy with major centres at Milan, Busto Arsizio, Biella, Florence and Vicenza—all areas of major textiles activity—the industry employs around 28,000 people and like other textile machinery industries in Europe in recent years has developed along specialist lines. Through companies such as EGAM, the state textile machinery concern employing around 5,000 people, and through Marzoli one of the main private sector concerns, Italy is one of the principal world suppliers of spinning machinery.

Italy also provides much of the specialised finishing equipment used to dye, bleach, dry, print or coat fabrics after weaving or knitting, and has been responsible for some of the main developments in knitting technology through Billi and its affiliates in EGAM's Matec group, and through various private sector companies such as Mecmor.

By contrast, though Italy still has some important weaving concerns such as Galileo, this sector internationally is now

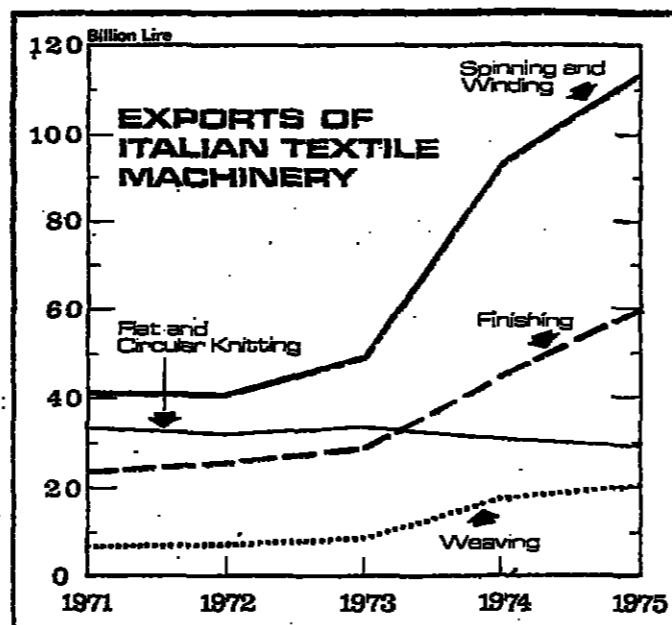
dominated by the Germans, Swiss and French. In product and often one of the Italian which through Platt-Saco Lowell and the Bentley group is the leading world producer of spinning and knitwear machinery, and often one of the Italian industry's main competitors.

The major problem faced by the Italian textile machinery industry, as by its counterparts in other European countries over the past few years, has been the decline in activity by European textile producers. In Europe the combination of lower consumer spending on textiles and higher imports has brought a reduction in textile output of 4 per cent. in 1974 followed by a further 6 per cent. decline in 1975. Although some recovery is expected this year, sharply reduced profits, and in many cases losses, by leading companies and in particular the fibre producers, have weakened the industry's ability to re-equip with new machines.

### Alternatives

For some time the textile machinery industry has been highly international, seeking to balance a decline in one market with sales elsewhere. Like its counterparts elsewhere in Europe the Italian industry has been forced to step up its efforts to find alternative outlets outside Western Europe. In Italy's case these have been chiefly in Eastern Europe over the past few years, for while exports to the rest of the EEC declined as a proportion of total sales abroad from 27 per cent. in 1972 to 15.5 per cent. last year, sales to the Comecon bloc climbed from 10 per cent. in 1972 to 29 per cent. in 1975.

Sales to Africa, South America and Asia have also risen as a proportion of total



exports, but North America like Europe has seen a decline from 39 per cent. of total sales in 1972 to around 7 per cent. last year.

The success of the Italian textile machinery industry in Eastern Europe owes much to its product profile. With 40 per cent. of its output in the spinning sector the industry is strong in an area of particular interest to countries starting to build up textile industries. Big groups like EGAM and Marzoli are also able to offer complete plants to developing countries, from the early fibre processing stages, such as carding, to winding.

The big rise in exports to Eastern Europe coincides with the delivery by EGAM of several new wool spinning plants to the Soviet Union. Mainly as a result of this, exports to the USSR, which totalled L2.5bn. in 1972, climbed

to L45.7bn. in 1975. Big increases in sales have also been achieved in other countries by developing wool or cotton textile industries, among them Iran up from L1bn. in 1972 to L8.7bn. in 1975, Iraq up from L0.45bn. to L7.7bn., Brazil up from L2bn. to L8.2bn., and Peru up from L0.65bn. to L5bn.

This deep involvement in newly developing textiles markets does have drawbacks, however, as well as advantages. On the positive side the Italian industry has won a valuable foothold in a number of important markets such as the Middle East and South America. These could show considerable growth over the next decade as the pace of industrialisation increases. The industry's success in these markets and Eastern Europe has helped it to maintain reasonable order books during the recession.

Competition for sales in these

markets can be very keen, however, driving prices down, particularly during a time of recession, and the technological content of the work involved is likely to be somewhat lower than for developed markets.

It is for this reason that an improvement in business in the more traditional European and U.S. markets would be particularly welcome to the industry, enabling it to get down to the task of sorting out some of its own internal structural problems.

One of the main strengths of the Italian textile machinery industry has been the combination of entrepreneurial and technical skills to be found in many of the small and medium-sized companies. As a result they have come up with original and important new developments in a number of fields. The strong position of the Italian textile industry in world markets, for example, owes much to the development of special finishing techniques by the industry in association with the manufacturers of dyeing, drying, bleaching, steaming and other similar equipment.

Nevertheless many leading manufacturers admit that substantial rationalisation of the industry is required. Apart from one or two big companies like EGAM which employs some 5,000 people, or roughly 20 per cent. of the industry's total labour force, manufacturing is split among about 300 companies, some of them employing only a handful of people. In addition, as in the Italian textile industry, some companies employ outworkers. Though this gives the industry flexibility, it can also deny all but a few big companies the scale of operations which is required to carry out the research and development necessary to stay

competitive in the long term in world markets.

Furthermore, it will increasingly be very highly sophisticated products which only a few countries will be capable of producing which the developed textile industries in the West will be seeking to purchase. Only in this way will the industry be able to keep ahead of the newly emerging textile nations. Manufacture of less sophisticated textile machinery may itself be undertaken under licence by the developing countries themselves.

### Rationalisation

A major problem militating against any substantial rationalisation of the industry into bigger and more powerful units, however, is the current economic and political situation in Italy. Italian government policy makes it virtually impossible to reduce the size of the labour force where more efficient methods of production become available, and although some textile machinery manufacturers, notably the loom builder Giani, have closed in recent years, the tendency has instead been for state money to be made available to maintain weaker concerns.

One result has been to delay the rationalisation of the knitting machinery sector which expanded dramatically in the late 1960s to meet fast-growing world demand for jersey-knit fabric. It has since suffered massive overcapacity, partly as a result of changes in fashion.

Political and economic uncertainty in Italy itself adds another dimension to the problems of the textile machinery sector by increasing the difficulty of selling on the home market. Though the dire pre-

dictions of political turmoil made immediately before the elections last June have not been borne out, investment by the industry's customers has nevertheless been slow.

This is partly due to the general textile recession and also to the high level of inflation in Italy which has meant companies have been able to make only a very poor return on their capital. Much of the investment by Italian textile manufacturers has been taking place in sectors where domestic machinery manufacturers cannot adequately meet requirements. Italian demand for weaving machinery—much of it for use by the strong domestic wool textile industry—has helped to give Italy a substantial deficit in trade with West Germany in textile machinery. Total imports reached L.87.4bn. in 1975—nearly double the figure three years earlier—while exports to Germany actually declined from L.13.6bn. to L.12.4bn. over the same period. Imports from Britain totalled L.13bn. and exports L.10.4bn. while France supplied equipment worth L.16bn. and purchased machinery worth L.11.9bn.

Whether or not the Italian textile machinery industry does succeed in making the adaptations required is likely to depend in the first place, on political and economic circumstances within Italy. The industry has its strengths in certain important areas, such as yarn processing and finishing, and the position it has built up in the developing and State trading countries—the big textile machinery buyers of the past few years—on which to base its efforts. Much is also going to depend on whether its European customers can also recover their strength.

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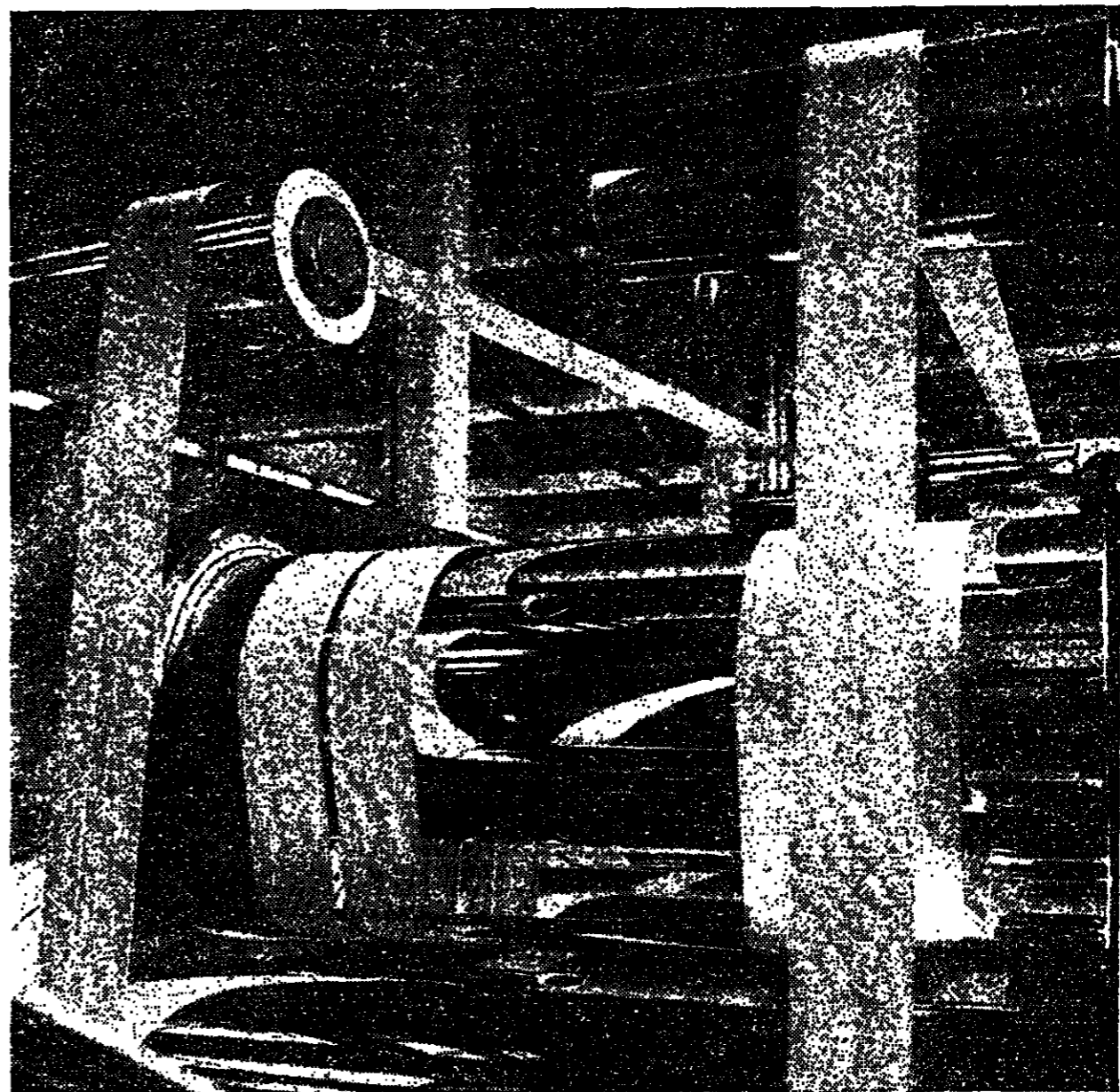
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## ITALIAN TEXTILE MACHINERY II

Dyeing is still  
big business

PERHAPS THE best-known feature of Italian textiles is colour and design—an ability to bring fabrics to life which often eludes the textile industry of other parts of Europe. But while much of the talent for this is in the mind and eye of the designer, for transmission of his ideas he has traditionally been very dependent on the strong Italian textile finishing industry. Literally dozens of companies, some of them very small, specialise in the manufacture of equipment for dyeing, bleaching, drying, steaming and printing of textiles, and in textile factories around the world much of the equipment used in these processes is Italian.

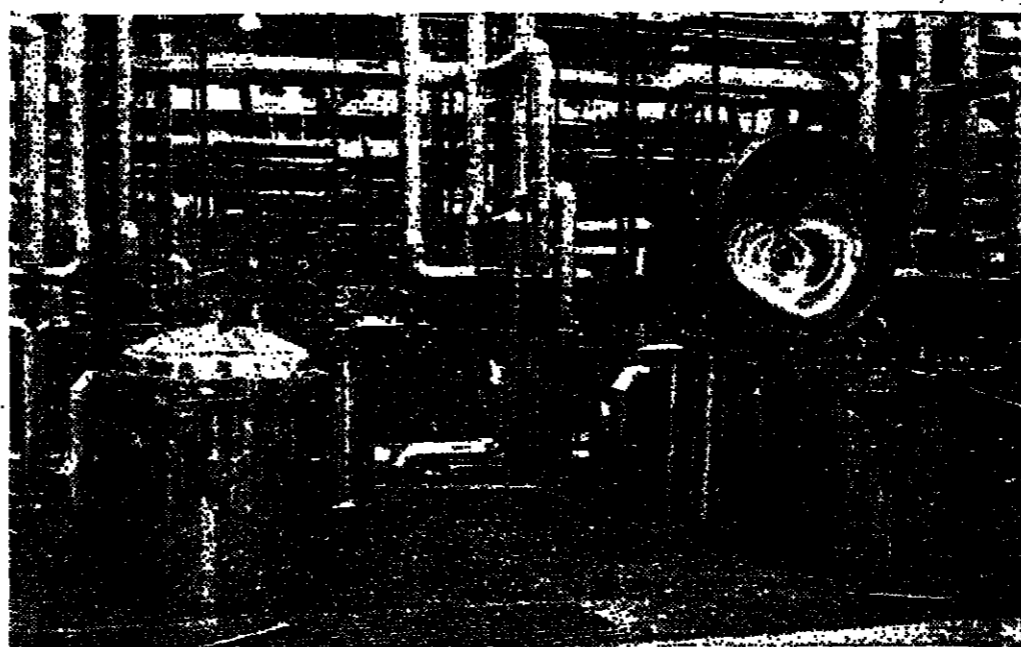
In the dyeing field much of the effort is currently being concentrated on cost reduction, and a number of new machines which are intended to achieve this have been developed. Unless efficiently controlled, dyeing can be very heavy on water, dyestuffs, and energy. Even though Italy and the Milan region — one of the main textile areas — have been suffering from one of the wettest periods in recent memory (unlike the U.K.) water charges still have to be paid. And dyestuffs and energy both have to be imported almost entirely from outside.

Among new developments, the ILLMA company, one of the leading manufacturers of dyeing machinery, has recently brought out a machine for low pressure dyeing of piece goods sewn together in rope form to a maximum weight of 200kg. The fabric circulates in a bath of dye liquor, and significant savings in dyestuffs are claimed. Another rope dyeing system has been developed by Mezzera of Milan which can be used for woven and knitted fabrics. In the jet dyeing field a number of companies, including MCS of Urganano, have brought out new generation machines which again claim to be able to offer significant reductions in dye usage.

## Lower cost

The dyeing field in particular has been allied to Italian electronic skill to enable extremely sensitive computer control of dyehouse operations to be achieved—again with the aim of reducing costs by more efficient use of raw materials and lower manning level requirements. The small Lukas concern which operates from Milan, 20 miles from Milan, has won a number of orders from Italy, the Middle East and Eastern Europe for automation of dyehouses, and has launched a new computer-controlled system which will handle all aspects of dyehouse operations from the dyeing process to administration of stocks.

The company's basic system is a process controller operated by punch-card. This controls and monitors dyeing operations, stopping the programme automatically where given margins for temperature, dyestuff feed or other inputs are being exceeded. Significantly, outside



Italian designed dyeing equipment.

Italy most interest in the system has been shown in countries with newly-developing textile industries, lacking skilled manpower and a tradition of dyeing technology.

The system has enabled these new operations to achieve very high standards of dyeing very quickly, helping to make their products more acceptable in Western markets. In parts of Europe, according to the company, there remains a degree of reluctance to commit dyeing operations wholly to automation, with many companies preferring to rely on the skills of dye technologists in key operations. The chief dyer and his team very often have to be convinced that their skills are not being undermined before they are prepared to accept fully automated dyehouses, Lukas claims.

Users of Lukas's system are generally trained in Italy for a period of several months in the company's technical assistance section and in customers' plants using Lukas systems. At present there is much more willingness on the part of developing countries to send their technicians to be trained in Italy than on the part of sophisticated producers in Western Europe.

The situation is now changing, however, and Lukas, which claims to be the biggest supplier of automated equipment for dyestuff plants in Italy, expects growth in demand from Europe to grow as more and more attention is paid by European dyeing companies to efficient use of materials. The Lukas system is built up on a modular basis consisting of individual process controllers suitable for small dyehouses and capable of being linked together for bigger units. In very large installations, the plant can be completely computerised including programming of machines and stock-keeping. The company uses Computer Automation equipment for which special programmes embracing complete dyehouse operations have been written.

Lukas is capable of building around 50 process controllers a month at present using its own relatively small labour force, and, in true Italian fashion, a network of component suppliers and outworkers for parts intervening period. The company depends in part for sales on close links with big Italian dyehouse machinery manufacturers such as ILLMA and Bellini who are able to introduce it to export markets. Some of the big companies like Mezzera make their own process control but will also use Lukas equipment where specified.

With the world textile recession depressing orders for completely new dyehouse plants, particularly in developed markets, an important element in overall sales has been represented by automation of existing dyehouses, a move a number of companies throughout Europe have decided on to reduce costs.

## Problems

But while the Italian textile machinery industry has recently been experiencing something of a recovery in demand for finishing equipment with exports last year, mainly to developing countries, increasing from L25bn. to L36bn., knitting machinery problems still remain.

Italy together with Britain has traditionally been one of the leading suppliers of machinery for wet knitting—a sector which enjoyed a tremendous boom in the late 1960s and early 1970s but which has been plagued by over-capacity since then. Europe's wet-knitting industry geared up in the late 1960s to meet American demand for fabric, but with U.S. producers moving in to meet domestic market requirements and the public swinging away from knitted to woven garments, machines throughout Europe have been standing idle for the past few years and companies have not been making sufficient profit to invest in new and more sophisticated equipment.

Italy's exports of wet-knitting machinery were down around 30 per cent in value last year compared with 1971 and, despite the massive decline in the value of the lira over the producers' claim business has been moving slowly this year as well.

Nevertheless Italy remains a significant force in knitting machinery, particularly in ladies' hosiery where the Billi company was responsible for some of the leading developments worldwide in the late 1960s. Billi's achievement in a field dominated until then by companies in the British Bentley Group was to produce multi-feed machines, capable of drawing on up to 72 yarns instead of the 24 yarns used at the time—a development which had dramatic effects on production speeds.

Billi was badly affected by the downturn in demand in the early 1970s, ending up in the embrace of EGAM, the state textile machinery company where it is now part of the Mater knitting machinery division.

The group has continued in the forefront of technical development in women's hosiery, however, developing machines for making the new seamless tights, and it has had close links with one of the big U.K. women's tights manufacturers, Pretty Polly.

It has developed a machine, the Zodiac 8 Complete, capable of producing a complete panty-hose in three minutes and has recently patented a new production method which enables tights to be manufactured in one work phase without interruption.

While technical developments have been an important factor in the success of the tights manufacturing sector, the producers have also been able to draw support from the very large investment programme in tights manufacture in Italy, a programme which has drawn criticism from other European countries and the EEC.

In fact, a recent report drawn up for the EEC painted a gloomy picture of the tights industry's problems. Over-production in Europe was put at 45 per cent. Prices were estimated to have fallen by around 9 per cent, per annum over the period 1970-74 yet still to have failed to prevent the market from falling in size. Despite serious over-capacity—and a relatively low level of tights usage by Italian women—Italian producers have gone in for substantial investment in a bid to capture a major share of the market, and now provide about half the made-up production of tights in the EEC. Much of the making up has been transferred by companies in other countries to low cost areas in a bid to maintain competitiveness.

In other knitting fields Matec's latest development is a new circular warp-knitting machine, the Saturnia, for producing cloths, flannels and furnishing fabrics which it claims offers productivity three times as great as conventional looms, greater versatility and simpler production methods.

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ALTHOUGH THE Italian textile machinery industry exports about 75 per cent of its output, the role in its success played by the domestic textile industry is still of considerable importance, and could become much more significant in the decade ahead. For, while the textile industry throughout much of Western Europe has been contracting, the Italian industry has been emerging as a stronger force in world markets, and if the current ambitious plans of the major fibre groups are an indication, is determined to play an even bigger part in satisfying European textile needs over the next few years.

Against the trend elsewhere, employment in the Italian textile and clothing industry has actually increased over recent years to around 900,000, and represents some 18 per cent of total manufacturing employment in Italy. If outworking or "family working" is also taken into account the total rises to 1,24m. Under this system companies put out parts of the manufacturing process to workers at home, causing allegations of unfair competition to be levelled by other textile producers in Europe, who claim Italian companies can in this way reduce costs by avoiding social and other charges accompanying full-time employment.

The build-up has coincided with increased Italian penetration of export markets—mostly in Europe—with some 40

per cent of the industry's total production, valued at around L7,000bn. in 1975, going to export markets. As Italy, like Britain, has suffered prolonged balance of payments difficulties, with the deficit in the first six months of this year exceeding L2,500bn., textiles and clothing have represented a valuable trade surplus—unlike Britain, where the clothing sector in particular, now returns a sizeable deficit.

With this sort of record—based on the deserved reputation of Italian textiles for good design—the sector has received a lot of help from the authorities, making it possible for manufacturers in the traditional textile areas to expand, and also encouraging them to invest in Italy's deprived areas.

In Tuscany, which includes Prato, near Florence, the centre of the highly-competitive Italian wool textile industry, employment in textiles and clothing provides work for more than 140,000, including family workers. Textile employment accounts for around one-quarter of all jobs in manufacturing in the area, though significantly a very large proportion is employed in factories with less than ten workers. In Lombardy, the area around Milan—also the main centre of textile machinery manufacture—employment in knitwear and hosiery has grown over the past ten years, going a long way towards compensating for the decline in the cotton sector. Knitwear and wool textiles have

also traditionally been important in Piedmont, the area around Turin, and Veneto, with the Rome region one of Italy's main clothing manufacturing centres.

Attempts to bring industrialisation to poorer areas of Italy have also resulted in a substantial growth in textile and clothing employment in Southern Italy where some 200,000 people—rising to 300,000 if outworkers are included—are now employed in the industry. With traditional textile manufacturing process firmly established in other areas the South has concentrated on areas of textile manufacture relatively new to Italy such as floor-coverings, and non-woven material, though clothing because of its high labour content has also been introduced into the area, and now employs around one-third of the total textile labour force.

With the Government supporting the expansion of the industry, Italian textile and clothing producers have managed to survive the recession in somewhat better shape than the industry in some other countries. With export-led growth continuing, the industry recorded a strong recovery in the first half of this year, and production increased by an estimated 20 per cent, despite a drop in the domestic market. Many problems remain to be sorted out in the textiles and clothing sector, however, in particular the excessive fragmentation of the industry. Even

CONTINUED ON NEXT PAGE

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مكتبة الامم المتحدة

## ITALIAN TEXTILE MACHINERY III

## Spinners on top

WHILE MUCH of the strength of the Italian textile machinery industry has traditionally been based on small and medium sized companies, it has also been recognised over recent years that much bigger enterprises capable of operating on a world scale are also needed if the Italian industry is to remain as a major force alongside the international giants dominating world markets.

In textile machinery, national boundaries mean very little, partly because the market in any one type of high volume textile equipment is likely to be relatively limited even in big textile producing countries such as Britain or Germany. The shift of textile production to the developing world has also helped to internationalise the industry, which in most cases has to look outside Europe for the bulk of its sales.

The technological complexity of modern spinning, weaving and knitting machinery means there is very little scope for new entrants, and companies throughout Europe which have been unable to spread their activities beyond their own national borders have generally had to withdraw into a specialised field of production or go out of business. With the exception of Germany, where all branches of textile machinery manufacture are represented, most countries in Europe now specialise in certain sectors, with Britain for example strong in spinning, knitting, and carpet machinery but weak in loom-building, an area dominated by the Germans, Swiss and French.

In the case of Italy the main sector where a world scale manufacturing capacity has been retained is in spinning, and, as might be expected, this has been largely achieved through State intervention. EGAM, a conglomerate embracing also mining and metals, is through its textile machinery group, headed by the sales company Simates, probably the second biggest world producer of spinning machinery after Britain's Platt-Saco-Lowell, part of Stone-Platt.

## Comeback

EGAM's textile machinery interests have been built up by grouping together a number of companies with different specialities, some of them, notably Savio the winding machinery manufacturer, rescued from financial difficulties. The company points to its broad base covering the various different stages in spinning manufacture as an important selling point. This enables it to offer a range of equipment from the early stages of fibre processing, such as combing and carding, to high-speed winding. In addition to spinning, EGAM also has a knitting division—Marec—which includes the former Billi concern, a victim of financial problems in 1971, and is attempting a modest comeback in weaving.

Through the EGAM group as a whole, Simates claims to be able to offer complete turnkey projects from choice of location, engineering, building, equipment supply to personnel training in any language, but as yet no total system of this kind has been sold. A number of contracts to supply complete textile operations—without the preliminary survey and engineering work—have been secured in Eastern Europe, the Middle East and in the developing countries.

Under an L80bn. deal which has been helping to boost Italy's textile machinery trade surplus with the Eastern block for the past few years, Simates is supplying nine wool spinning

plants, manufactured by its affiliates, to Russia. Other cotton and wool spinning plants have been supplied to Iraq, Korea, Turkey and Peru.

The company has found it much more difficult to sell in advanced European countries during the present recession but has derived some protection from the worst effects of the downturn through the strong links now established particularly with Eastern Europe and with developing countries anxious to establish a textile industry to take advantage of indigenous sources of raw material such as cotton.

In cotton spinning it is now essential for the major producers to be able to offer within their ranges the open-end (OE) system of spinning using a rotor instead of conventional spindles. A development which is taking an increasing share of new textile installations, particularly in developed markets, EGAM has licensed a Czech system and claims to have eliminated early problems with this, and has sold about 300-400 machines.

Roughly 30 per cent. of sales are currently OE but the company expects OE to take a 50 per cent. share of the market alongside conventional spinning frames within the next few years, with most of the sales going to developed markets which can take the best advantage of the lower labour costs of operating the system, as well as being able to afford its higher capital cost.

The company, which last year had a turnover of L86bn. and

employs a total of 5,000 people, is hoping for significant sales, too, of one of its own technical developments which can cut down on some of the early processing required in the preparation of man-made fibres for OE spinning. Its cotton-spinning system, tow to tow, transformer line—currently being evaluated by Deering Milliken the technologically orientated U.S. textiles producer—cuts out carding, and as a result offers prospects of reduced working times and costs. The system is also on trial with an Italian cotton system spinners.

In wool system spinning the company's main recent development is a rotating head drawframe which gives faster delivery and higher output than the traditional screwhead system. The system also has the advantage of reduced noise levels and lower maintenance costs.

EGAM has also become involved in recent years in the manufacture of equipment for producing continuous filament man-made fibre, including draw

texturing machines. The company has developed a new high speed take-up frame delivering partially-orientated yarn at 4,000 metres per minute to supplement its standard frame working at up to 2,500 metres per minute. In draw texturing the aim is to compress yarn production stages, eliminating the separate drawing stage between spinning and texturing, and enabling the fibre producers to offer a textile yarn ready for use from their plants. In this

field EGAM has recently unveiled a new machine known as the STC, capable of texturing that is adding bulk to the yarn, at speeds of up to 800m. per minute.

While EGAM is competing in world markets to supply the machines processing the main fibres used by the textile industry, such as cotton and polyester, some of the more specialised companies in Italy have also come up with interesting developments, particularly in the exploitation of polypropylene. This fibre was invented in Italy leading to a high level of usage by Italian industry and to continued technical development.

## Extensions

Among the companies producing machinery specifically for use with polypropylene, Ackermann Italia di Milano is now offering a new development of its horizontal line for spinning, stretching, crimping and baling polypropylene yarn from the polymer chip stage. Ackermann's line, which uses a system of extruders to convey pellets to the dye heads, has been extended from eight to 16 spinnerettes and is capable of producing as much as 300kg per hour in the 12-15 denier range.

Ackermann claims the horizontal system of spinning the fibre—first devised by Mackie in Northern Ireland—offers considerable savings over a conventional vertical line, and has so far sold its eight of 16 spinnerettes to around half a dozen customers in Italy as well as to export customers in Belgium, Germany, Poland, Spain and Brazil. The system is proving particularly attractive to producers of low-cost carpeting who need punch the fibre produced by the line and coat it with wax to give it stability before applying a layer of foam. Advances in printing polypropylene—a notably difficult fibre to apply colour to because of its lack of absorbency—have made it possible to produce patternings on the completed carpets. Other companies are using the line to produce fibre for blankets and other similar applications.

The development is unlikely to make much impact on the carpeting sector in the U.K., which has a higher level of carpeting usage and higher standards than the Continent generally, but the cheapness of carpeting produced by the

system, which can be half that for normal tufted carpets, could enable new markets for carpeting to be developed in countries in the Mediterranean or in the developing world where demand is poor.

The company is also a producer of equipment for production of polypropylene multi-filament yarn, which includes among its applications protective clothing, filter cloths and other industrial and agricultural uses. Through its associates Ackermann is developing new techniques for multifilament polypropylene texturing. Polypropylene is again a very difficult fibre to texture because of its "memory"—its tendency to want to revert to its original form.

These represent some of the developments being undertaken by Italian yarn processing companies but they form only a small part of the total picture. Another traditional area of Italian expertise which has become even more important in recent years has been the special techniques developed to ensure that high cost fibres such as wool are fully utilised, through cutting down waste to a minimum and reusing waste where possible.

Helped by the domestic textile machinery industry which has drawn on innate Italian inventiveness to come up with new ways of recovering wool, the wool textile industry around Prato near Florence has become the most competitive woollens producer in Europe (though the industry in other countries including Britain would argue that other factors have also been at work including much less stringent control over employment practices).

Nevertheless in the wool recovery trade Italian machinery has played its part by enabling the industry to obtain the materials it requires efficiently and cheaply. Though the woollens industry in other European countries has been severely reduced in size, Italian textile machinery producers are now displaying a greater willingness to offer their products more widely to export customers. While only a small part of the total industry, it helps to add up to a comprehensive Italian involvement in all aspects of yarn preparation and spinning.



A central control system supplied by Lukas at the Tinctorio Emiliana Stefani dyehouse near Milan.

## Workforce

CONTINUED FROM PREVIOUS PAGE

without the outworker system, some 15 per cent. of employees in textiles and 35 per cent. in clothing are in companies employing fewer than 10 people. As in other sectors of the Italian economy, however, rationalisation is difficult to achieve against a background of 2m. unemployed. Although there is State involvement in textiles through GEPI, the reorganisation of the industry into bigger units is likely to be a very long and slow process.

The extent to which the Italian Government is relying on a strong performance in markets around the world from textile and clothing is indicated by the sanctioning over recent years of major expansions to Italian man-made fibre capacity—the main raw material used by the downstream textile and clothing industries.

Last year man-made fibre producers in Europe managed to lose some £500m. between them, including a loss of £75m. by Montedison, the biggest Italian producer. Plants this year are still running way below capacity

though they have climbed from the 50-60 per cent. utilisation rates experienced in some cases last year. Prices are still very low, and total fibre growth rates over the period 1973-1980 are not expected on some forecasts to exceed 1.7 per cent. per annum, though synthetics will grow faster as a result of the anticipated fall in the share of the market held by cotton, and cellulosic fibres such as rayon.

A major problem has of course been the high level of imports from developing countries of fibre, fabric and clothing, affecting the sales of the man-made fibre producers and of their customers, and strong pressure is being exerted by the industry on Governments throughout Europe for changes in the GATT Multi Fibre Arrangement which regulates world textile trading, to prevent further erosion of the European industry's share of the market.

Nevertheless, though over capacity is currently a major problem facing the European fibre industry with companies in a number of countries seeking to eliminate surplus plant, the Italian industry is planning to become a much bigger force in Europe. By the end of next year theoretical fibre producing capacity in Italy may have increased to exceed that of Britain, making the Italians the second biggest producers in Europe after West Germany.

## Expansion

Much of this activity is concentrated in Sardinia, where new plants qualify for Government assistance available to industry willing to invest in areas of high unemployment. The latest surge in expansion is being undertaken by SIR, Italy's third biggest chemical company after the two state corporations, Montedison and ENI.

SIR, privately owned by Signor Nino Rovelli, is a relative newcomer to the fibre business. It has just opened a 25,000 tonnes a year acrylic fibre plant in Sardinia to add to its existing 20,000 tonnes per year polyester staple facilities. Other plants planned by 1980 by SIR include a 30,000 tonnes a year polyester filament plant and further 40,000 tonnes a year polyester staple and 35,000 tonnes acrylic plants.

Fibre del Tiro, at Otano in Sardinia, which is jointly owned by Montedison and ENI, is building a new 30,000 tonnes acrylic plant. Altogether total Italian acrylic capacity is expected to rise to 250,000 tonnes by 1980.

In polyester the country's total capacity in staple and filament is due to climb from the 1975 figure of 120,000 tonnes to 1980, and in nylon, capacity is to rise from 155,000 to 200,000 tonnes over the same period.

The Italians justify their investment in fibres on the grounds that the industry in Europe as a whole could supply a greater proportion of European textile industry requirements. The Italians calculate that around 95 per cent. of U.S. textile industry requirements are met by domestic fibre producers whereas in Europe the figure is only around 80-85 per cent.

This evidently assumes, however, that the addition of further capacity and competition will improve rather than worsen the already weak financial position of European fibre producers. The producers in other European countries would almost certainly argue that competition from low-cost fibre originating outside the EEC, and not lack of availability of fibre from within the EEC, is the main reason for the degree of penetration of the EEC textile industry achieved by imports. The prospects for increased fibre exports outside Europe also seem slim, especially if existing imports are to be displaced.

The Italian fibre producers' ambitious plans nevertheless mean that in the period 1975-80 Europe will see a bigger expansion of fibre capacity than any other developed area. While the U.S. is planning a 23 per cent. increase, Taiwan a 32 per cent. increase and South Korea a 19 per cent. increase, with Japan proposing a standstill, Europe will be adding 37 per cent. new capacity of which Italian plans account for around two-thirds.

Whether or not this is to the liking of Italy's EEC partners, the consequence is likely to be a significant increase in the availability of Italian fibre in Europe at prices which may relate more to the necessity to maintain employment than to the need to make adequate returns. Much of the fibre is likely to be exported, with SIR planning a 50 per cent. export level, but considerable quantities are likely to find their way into Italian mills to emerge ultimately at competitively priced fabrics and made-up goods. It is a prospect which is likely to please Italian textile machinery manufacturers more than Italy's textile rivals in Europe.

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A basic innovation, introduced by Giudici in 1963, is the well known false twist friction device patented by the Company: this device met with immediate success, as has been proved by several thousands of these machines being installed throughout the world (mainly in the USA). For many years this has helped to prove the value of the friction system, today universally adopted.

Last year Model TG4/F3, a new and original texturing machine was introduced; its chief features are: high productivity, ease of operation and competitive price—all in the Giudici tradition.

Another interesting line of production is the manufacture of hosiery processors for the finishing and automatic packaging of garments, under licence of INTECH Corp., Charlotte, N.C., USA.

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## 1975: Sanpaolo in figures

the balance sheet  
as at 31st December 1975  
in billion lire

Assets		Liabilities	
Cash and balances with other banks	1,283	Total deposits:	
Securities and non-trading investments	1,170	Deposit and current accounts from customers and banks and other funds	4,425
Loans and advances: loans, advances and other accounts	2,242	Mortgage bonds and other bonds	1,834
Directors' mortgage loans and other medium and long term loans	1,867	Sundry funds	779
Fixed assets	96	Other liabilities	920
Other assets	903	Capital and reserves	200
Contra accounts	5,879	Net profit	3
	13,440	Contra accounts	5,879
			13,440

After the customary deduction for depreciation and reserve funds, the net profit of L. 3,158 million provides an amount of L. 1,125 million for donations to charities, cultural institutions and public welfare.

ISTITUTO BANCARIO SAN PAOLO DI TORINO





## STOCK EXCHANGE REPORT

# Gilts good and technical rally in equities continues

## Share index up 6.1 more at 345.8—Gold shares good

## Account Dealing Dates

Option  
First Declared Last Account  
Dealings Dealings Day  
Sep. 6 Sep. 16 Sep. 17 Sep. 28  
Sep. 20 Sep. 30 Oct. 1 Oct. 12  
Oct. 4 Oct. 14 Oct. 15 Oct. 26

\* New time "dealings" may take place from 9.30 a.m. to 2.00 p.m. on business days.

With Monday's "after-hours" announcement of a new long "tap" stock removing one of the major uncertainties, stock markets put on another good performance yesterday. Underlying sentiment was also helped by growing optimism about the outcome of the seamen's pay negotiations.

After overnight consideration of the terms of the new tap stock, British Funds encountered a useful business: long-dated stocks closed with gains ranging from 1 to 2 and short-dated issues were up to 3 better. The Government Securities Index closed 0.26 higher at 58.87, its biggest one-day rise for nearly seven weeks.

Once again, the improvement in equities was largely technical. Nevertheless, gains generally ranged to 8 and sometimes more which left the FT 30-share index with a further rise of 6.1 at the close of 345.8, making a two-day gain of 11.3. Elsewhere, Rhodesian issues continued to claim a fair amount of interest on constitutional settlement hopes, although Rhodesian bonds failed to make any further headway.

Secondary issues made a fairly general all-round improvement: rises led falls by 3-1 in FT-quoted Industrials and the FT-Actuaries All-Share Index gained 2.1 per cent to 142.67.

Helped by hopes of a Rhodesian settlement and a rise of \$4.25 to \$19.50 per ounce in the price of bullion, Gold Mining issues

were in line with market expectations to close a net 3 better at 245.9. Rhodesian settlement hopes continued to spur Standard Chartered, which added 9 more to 328.9. The former trend in gilts helped Discounts venture forward and gains of 10 were seen in Alexander, 175p, Allen Harvey and Ross, 340p, and Union, 233p.

## Funds fare well

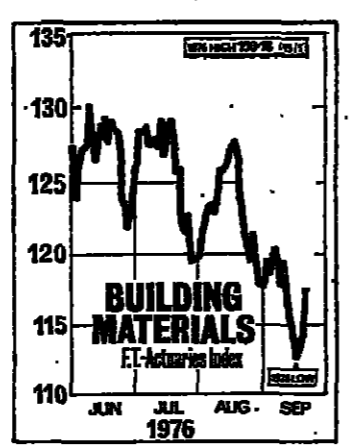
Views that come Friday, the terms of the new "tap" stock, Treasury 141 per cent, 1984 could look attractive over the effects of a lower rate for sterling, boosting longer-dated British Funds as much as 5. Morning business in this sector was particularly brisk, being given an added fillip by selective switching between stocks. A few high-coupon issues closed below the best, this possibly reflecting a move to acquire funds for applications for the new "tap". The shorts tended to be a little overshadowed, but a small demand coupled with bear-closing brought gains extending to 1. The "tap" Treasury 92 per cent, 1981, improved 1 to 89, a level at which it was thought the Government broker might re-activate the stock.

Southern Rhodesian bonds held at an enhanced price, despite a marked reduction in interest. The attractions of U.S. stock investment initiated revised institutional demand for investment currency which impinged on a short supply situation in a market already influenced by the continued downturn in sterling. As a result, the premium jumped 41 points to 117 per cent. Yesterday's SE conversion factor was 0.7014 (0.7109).

## Bk. Scotland below best

The big four Banks took Monday's technical rally a useful stage further yesterday. Barclays edged best at 247.4, up 9. Supported up to 250p in front of the interim figures, Bank of Scotland eased back on the first-half profits which

were in line with market expectations to close a net 3 better at 245.9. Rhodesian settlement hopes continued to spur Standard Chartered, which added 9 more to 328.9. The former trend in gilts helped Discounts venture forward and gains of 10 were seen in Alexander, 175p, Allen Harvey and Ross, 340p, and Union, 233p.



of 109p to finish unaltered at the overnight close of 109p. Other Composites did well with Improvements of 6 and 10 respectively seen in Phoenix, 192p, and Sun Alliance, 368p. Brokers were also favoured with C. E. Heath 10 up at 376p, C. T. Bowring hardened 3 to 89p ahead of tomorrow's interim results.

Quietly firm conditions prevailed in the drinks sector. Distillers advanced 3 to 222p and Bass Charlington and Arthur Guinness Group, 114p, both hardened 2 to 83p and 114p respectively. Buildings enjoyed another firm session yesterday. Support in

front of their respective interim statements to-day and to-morrow left Tilly Construction 4 up at 196p, and Travis and Arnold 3 better at 81p. Tarmec, 140p, and Tunnel "B", 135p, were both rounded 4 and 4, while AP Cement rose 3 to 155p, after 158p.

ICI put on 3 more to 320p in Chemicals, Laporte Industries hardened a penny to 91p in front of to-day's half-year figures. Among firm Television concerns, HTV gained 3 to 43p; the preliminary results are due to-morrow.

Half-year results comfortably above market expectations set the seal on a good day for BICC, which added 6 up at 104p, after 108p. Philips Lamp moved ahead 43 to 918p, helped by the rise in the investment premium. Wall Street's early strength yesterday and Amsterdam advances. Thorn Electrical improved 6 more to 204p and K&M 2 further to 209p, while GEC ended 2 harder at 137p, after 138p.

Outside the leaders, Stocklake featured with an advance of 6 at 27p in reflection of its Rhodesian interest. Racial Electronics were 6 higher at 179p, after 187p, while the chairman's encouraging statement at the annual meeting left Laurence Scott 2 higher at 52p. There was a little enthusiasm shown for leading stocks, although prices closed marginally firmer. "Gussies" - A managed an improvement of 1 at 171p, while Lez Cooper, 120p, gained 4 at 55p, while Status Discom, 41p, and Audiotronic, 37p, both put on 3. On the other hand, the first-half loss brought Brown, 120p, and Lez Cooper, 120p, both hardened 2 to 83p and 114p respectively. Buildings enjoyed another firm session yesterday. Support in

Herbert Morris moved above the Babcock and Wilcox offer price of 120p when the former's quick opposition to the proposal promoted thoughts of an increased bid or the possibility of a counter-offer. Morris closed 9 higher at 127p, after 125p, while Babcock and Wilcox moved up 5 to 70p. Half-Thermotank were also in demand and gained another 5 to 72p; the offer from APV, 3 dearer at 250p, was announced last yesterday evening. Elsewhere, in Engineering, Hawker rose 3 to 374p, after 379p, and GKN put on 4 to 232p, the latter in front of the large Polish contract, but Metatrax slipped 2 to 14p on lower interim results.

Late afternoon speculation of a revised higher bid, subsequently confirmed, took a level which was maintained following the official announcement from Tate and Lyle, which reacted from 221p to close a net 2 lower at 215p. Other features in Foods included United Biscuits which, on further appraisal of the impressive first-half results, climbed 5 to 112p and Bakers' Markets rose 6 at 59p after the marked mid-way improvement and profits forecast. In Supermarkets, William Morris responded to increased demand by rising 2 to 82p. Grand Metropolitan remained in the van in Hotels, closing 2 higher at 62p.

Fresh fall in Ozalid Miscellaneous Industrial leaders continued to move forward in the thin trade. Advancers around 3 were secured by Metal Box, 243p, Rank Organisation, 147p, and Reed International, 228p, while Beecham, 327p, Boots, 111p, and Bowater, 169p, all ended firmer. Elsewhere, Ozalid retreated 6 more to 97p for a two-day fall of 13, still depressed by the disappointing half-year results. Lower interim profits brought a penny cheaper at 30p following the full report, but the Australian Lead Lease retreated 15 to 285p.

Overseas Traders participated in the general firmness. Agar Cross gained 3 to 19p in response to agreed terms (current worth 201p per share) from Newmont Industries, a penny harder at 48p. The first-half profits improvement left James Finlay 3 better at 128p. Lombard added 2 more to 77p for a two-day rise of 7, on consolidation of Fraser closed a penny easier at 62p. In brighter mood, Trafalgar House rose 4 to 92p with the aid of favourable Press comment, while Sale Tilney, on the good price for its assets, rose 10 more to 112p. Hanson Trust added 51 at 103p and Hay's Wharf 4 at 52p.

Among firm Motors and Dis-tributors, Lucas gained 2 to 185p, while Dunlop improved 2 to 75p. Belgrave Assets 21 off at 14p.

Other movements of note were few, but Lex continued to glean support from the recent good interim results and added 3 at 45p. United Newspapers rebounded after their recent lean spell to close 10 up at 220p; sellers may have changed tack because of the nervousness of the interim results, due next Tuesday. Thomson recovered 6 to 278p. Paper-Printers also took a turn for the better and DRG picked up 4 to 100p, while McCronequale, re-gained 5 to 144p. Following re-ceipt of the subsidiary's final dividend payment from Portugal, Eucalyptus Pulp moved up 4 to 45p.

Overseas influences and, in particular, U.S. trends together with further business of a currency hedging nature were significant in Oil. Royal Dutch rose 11 to 540, and Shell gained 6 more to 382p. British Petroleum, helped by late Vickers, closed 3 higher at 608p, after 610p. Tricontinental responded to the excellent first-half results by rising 6 to 70p. Elsewhere, Lamsdorff issues hardened 2 further to 107p (peaks of 230p, while Siebens (U.K.) rallied 5 to 103p.

Buying interest picked up a little in the Property leaders, where Land Securities improved 3 to 135p and English Property hardened 11 to 39p. Secondary issues were also inclined to edge forward, although Interurban day on takeover hopes, reacted to 58p before closing a net 11 easier at 61p. Law Land added 3 at 41p, benefiting from the half-year statement. Property Group and Investment rose 9 to 218p, while gains of 5 were registered in Imry, 188p, and United Real, 167p. Regional Properties "A" were a penny firmer at 30p following the full report, but the Australian Lead Lease retreated 15 to 285p.

Investment Trusts generally closed firmer, but profit-taking after the previous day's late gains added 51 at 103p and Hay's Wharf 4 at 52p.

Among firm Motors and Dis-tributors, Lucas gained 2 to 185p, while Dunlop improved 2 to 75p. Belgrave Assets 21 off at 14p.

## FINANCIAL TIMES STOCK INDICES

FINANCIAL TIMES STOCK INDEXES									
	Sept. 21	Sept. 20	Sept. 19	Sept. 18	Sept. 17	Sept. 16	Sept. 15	A.X. Sept.	Aug. 31
Government Secs.	59.87	59.61	59.65	59.57	60.03	60.25	60.25	60.25	60.25
Fixed Interest	59.44	59.55	59.59	59.59	59.77	59.77	59.77	59.77	59.77
Industrial Ordinary	363.25	359.77	359.68	359.68	359.68	359.68	359.68	359.68	359.68
Gold Mines	123.4	117.6	114.5	113.6	113.6	113.6	113.6	113.6	113.6
Ord. Div. Yield	6.53	6.53	6.53	6.53	6.53	6.53	6.53	6.53	6.53
Shareings % (1920-1929)	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51
Price Earnings Ratio (1920-1929)	7.69	7.57	7.48	7.48	7.48	7.48	7.48	7.48	7.48
Dealings million £	4,403	4,116	4,267	4,001	4,587	4,034	4,034	4,034	4,034
Equity turnover %	—	35.51	45.83	46.57	41.96	28.13	28.13	28.13	28.13
Value of new issues	—	9,396	10,769	10,550	9,972	9,940	9,940	9,940	9,940

## AUTHORISED UNIT TRUSTS

Unit Tr. Mgrs. Ltd. (1976) Chase Rd. Aylesbury. 0293 2041 Unit Tr. Mgrs. Ltd. (1976) Chase Rd. Aylesbury. 0293 2041	Bridge Fund Managers (1976) 54, Kingsway Lane, E.C.2 01-623 4551 Bridge Fund Managers (1976) 54, Kingsway Lane, E.C.2 01-623 4551	G.T. Unit Managers Ltd. 16, Pashley Circus, E.C.2M 7DD 01-623 8131 G.T. Unit Managers Ltd. 16, Pashley Circus, E.C.2M 7DD 01-623 8131	Kleinwort Benson Unit Managers 20, Fenchurch St., E.C.3 01-623 8000 Kleinwort Benson Unit Managers 20, Fenchurch St., E.C.3 01-623 8000	Mercury Fund Managers Ltd. 30, Gresham St., E.C.2M 3TF 01-600 4556 Mercury Fund Managers Ltd. 30, Gresham St., E.C.2M 3TF 01-600 4556	Piccadilly Unit Tr. Mgrs. Ltd. (1976) 65, Leadenhall St., E.C.3 01-623 8131 Piccadilly Unit Tr. Mgrs. Ltd. (1976) 65, Leadenhall St., E.C.3 01-623 8131	J. Henry Schroder Wagg & Co. Ltd. 120, Chancery Lane, E.C.2 01-623 8131 J. Henry Schroder Wagg & Co. Ltd. 120, Chancery Lane, E.C.2 01-623 8131	Target Tr. Mgrs. (Scotland) (1976) 120, Chancery Lane, E.C.2 01-623 8131 Target Tr. Mgrs. (Scotland) (1976) 120, Chancery Lane, E.C.2 01-623 8131
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## INSURANCE, PROPERTY, BONDS

## REGIONAL MARKETS

Region	Index	Value
North	100	100.00
East	100	100.00
West	100	100.00
South	100	100.00
London	100	100.00

THE GREAT NORTHERN  
ELECTRIC COMPANY LIMITED  
OF DENMARK

INTERIM STATEMENT FOR THE FIRST HALF OF 1976

Turnover was about 10% up on the first half of 1975. Turnover in Sorno A/S is not included in the comparison. Sorno ceased to be a member of the group in 1976.

The parent company ordinary results (after depreciation before extraordinary items, etc.) have shown a 10% improvement compared with the preceding year, group results were somewhat weaker.

The same tendency is expected for the whole year but in sequence of various extraordinary receipts parent company group net results are expected to be better than the year before.

On evaluating the outlook for the near future it has been an into account that the upward economic trend has not resulted in any significant improvement in marketing conditions. The high level of costs has affected the earning ability of the companies adversely, and prospects of an improvement are dependent on costs in Denmark rising at a rate faster than those abroad.

## APOLLO

Edited by Denys Sutton

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Tel: 01-248 8000

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## OFFSHORE AND OVERSEAS FUNDS

Arbuthnot Securities (C.I.) Limited P.O. Box 10, St. Peter Port, Guernsey 01-623 8131 Arbuthnot Securities (C.I.) Limited P.O. Box 10, St. Peter Port, Guernsey 01-623 8131	Cornhill Ins. (Guernsey) Ltd. P.O. Box 10, St. Peter Port, Guernsey 01-623 8131 Cornhill Ins. (Guernsey) Ltd. P.O. Box 10, St. Peter Port, Guernsey 01-623 8131	Hambro (Guernsey) Limited P.O. Box 10, St. Peter Port, Guernsey 01-623 8131 Hambro (Guernsey) Limited P.O. Box 10, St. Peter Port, Guernsey 01-623 8131	Kleinwort Benson Limited P.O. Box 10, St. Peter Port, Guernsey 01-623 8131 Kleinwort Benson Limited P.O. Box 10, St. Peter Port, Guernsey 01-623 8131	Old Court Commodity Fd. Mgrs. Ltd. P.O. Box 10, St. Peter Port, Guernsey 01-623 8131 Old Court Commodity Fd. Mgrs. Ltd. P.O. Box 10, St. Peter Port, Guernsey 01-623 8131	TSS Unit Trust Managers (C.I.) Ltd. P.O. Box 10, St. Peter Port, Guernsey 01-623 8131 TSS Unit Trust Managers (C.I.) Ltd. P.O. Box 10, St. Peter Port, Guernsey 01-623 8131
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## NOTES

Prices do not include 5% premium, where applicable, and are in pounds sterling unless otherwise stated. Prices are shown in full column unless otherwise stated. Prices are shown in full column unless otherwise stated. Prices are shown in full column unless otherwise stated.





## 'Smith majority rule move on Friday'

BY BRIDGET BLOOM, AFRICA CORRESPONDENT

TANZANIA EXPECTS that Mr. Smith, the Rhodesian Prime Minister, will announce his acceptance of a rapid transfer to majority rule in Rhodesia when he addresses the people of Rhodesia on Friday.

After one-and-a-half hours of talks with Dr. Kissinger, the U.S. Secretary of State, President of Nyerere of Tanzania, said today it was his belief that Mr. Smith "is going to make it quite clear" that he accepted "what one might call the Callaghan conditions" on negotiations leading to majority rule in Rhodesia.

These conditions, laid down on March 22 by Mr. Callaghan when he was Foreign Secretary, essentially provide for majority rule in Rhodesia within 18 months to two years.

Dr. Nyerere's optimism to-day that negotiations with Mr. Smith are now possible contrasts starkly with his pessimism only a week ago.

The Tanzanian President gave one note of caution, which it must be said is emphasised even more strongly by many observers here. He now believes that Britain, the U.S. and Tanzania spoke "roughly the same language" on Rhodesia. "We understand the same thing."

"Whether Smith does I don't know. We will have to wait until Friday. In this equation Smith is the imponderable."

But his overall tone of optimism reinforces suggestions that Dr. Kissinger, together with Mr. Vorster, South African Prime Minister, was able in Pretoria last week-end to persuade Mr. Smith to agree to what amounts

to a total volte face in his own Government's policy. While Dr. Nyerere did not think that fundamentally Mr. Smith had changed, "if the United States says to Smith that the game is up, then Smith is not so foolish as not to understand that he can't go on."

Mr. Smith could find his own way, he said, of making it clear on Friday that he accepted the Callaghan conditions. These, Dr. Nyerere made clear, would then be the basis of negotiation, "not a settlement."

The next step would be a constitutional conference called and probably chaired by Britain, in London or elsewhere.

The conference would be between representatives of the African Nationalists and the white Rhodesians. Dr. Nyerere did not rule out a role by Mr. Smith in this conference. "Some-one," he said, "would have to represent the Government of Rhodesia. The composition of their delegation is up to them."

**Guerrilla role**

On the African side, the President said, it was not necessary that the Nationalists formed a single party, but he hinted that the guerrillas must endorse, if not participate in, the conference.

Among its first tasks would be to reach agreement on forming a provisional Government which would have an African majority. It would be this Government which would call off the guerrilla war. The other tasks would be to work out a clear majority-rule constitution and set a date for independence.

Dr. Nyerere was not wholly specific about a timetable for

DAR-es-SALAAM, Sept. 21

independence. However, he pointed out that Mr. Joshua Nkomo, widely considered the most moderate Nationalist leader, had said yesterday he thought that there should be only nine to 12 months' transition.

On Namibia Dr. Nyerere seemed less optimistic. He suggested that South Africa had still not accepted that a constitutional conference had to be held between itself, the main Nationalist party, SWAPO, and the UN.

Dr. Kissinger later arrived in Kinshasa, capital of Zaïre, from Tanzania, on his African peace mission.

Our Salisbury correspondent wrote last night: The Rhodesian Cabinet met for three-and-a-half hours this morning to discuss Dr. Kissinger's settlement proposals. Mr. Smith told newsmen it had been a "good meeting with straight talking as usual," but refused to say whether the Cabinet had accepted the proposals.

"You don't accept big proposals in a rush. We're going to take our time. The Cabinet Ministers have got papers with them and will think about them this afternoon and to-night. The Cabinet meets again to-morrow morning."

Mr. Smith would not disclose whether there had been differences of opinion at to-day's meeting, attended by the 15 white and four black Ministers, or whether he had recommended the proposals to the Cabinet.

He emphasised that the final decision was up to the Rhodesian Front party caucus on Thursday.

## SUITS chief faces Stock Exchange probe

BY MARGARET REID

THE STOCK Exchange Council yesterday set up a top-level three-man committee to investigate the dealings over the past 18 months in Scottish and Universal Investments by the chairman, Sir Hugh Fraser, and other directors.

The importance which the exchange attaches to the matter is underlined by the fact that the inquiry is to be presided over by Mr. David LeRoy-Lewis, until recently one of its deputy chairmen and now chairman of the jobs Akroyd and Smithers. The other members are brokers Mr. Richard Lawson, of W. Greenwell, and Mr. Patrick Milford-Slade, of Cazenove.

The move follows widespread anxiety about the misclassification of cash in "SUITS" 1975 accounts of loans totalling £4.7m. — of which £4.2m. has since been written off — and about directors' share sales before this was disclosed.

The company's auditors, City accountants Touche Ross, are resigning because they failed to notice the erroneous classification of the loan which they said arose from a straightforward clerical error by SUITS.

Sir Hugh, who owns some 10 per cent of SUITS shares, while his family interests control another 23 per cent, said yesterday that he welcomed the Stock Exchange inquiry. "I am delighted I have nothing to hide."

Over the 18 months from March 1975, Sir Hugh sold 1.55m. SUITS shares. He added yesterday that full details of his dealings in the shares had already been sent to the company through their brokers Greaveson Grant.

### Resignation

On the misclassification of the loan, he has said: "It was a stupid mistake. In no way was this deliberately concealed."

Sir Hugh, who has already said he is resigning as managing director, promising a "radical reorganisation of the management structure," referred again yesterday to his willingness to resign as chairman if shareholders wanted this — and added that he would not vote his family shareholding of 33 per cent against any such move.

"If the shareholders wish me to resign as chairman, of course, I will do so. I would not vote my shares or those of my family and trusts in my favour. The decision would be made by the remaining 66½ per cent," he added.

Sir Hugh said that he was coming to London from Glasgow for a meeting to-morrow morning with the informal committee of institutional shareholders set up to look into the matter. That afternoon he is to meet Mr. David Hopkinson, chairman of the management side of the big M. & C. unit trust group, which holds 5 per cent of SUITS shares.

### Loan

Apart from Sir Hugh, two other directors, Mr. Angus Grossart, who heads the Edinburgh merchant bank Noble Grossart, and Mr. Nicholas Redmayne, of Greaveson Grant, sold some SUITS shares in 1975-76.

The controversial £4.2m. loan, since written off, was made to Amcal, a company jointly owned by Amalgamated Property and Investment, now in liquidation, and another company in which Sir Hugh and Mr. Grossart have interests.

The Stock Exchange said yesterday that the appointment of Mr. LeRoy-Lewis' committee on the share dealings followed preliminary inquiries which have been made by the quotations committee about information revealed in SUITS' 1976 accounts.

The Exchange added that its quotations committee was continuing to study other information revealed in the report and accounts. This is thought to be a reference to the loan and disclosure considerations concerning it.

The LeRoy-Lewis committee is expected to publish the results of its work, which will be widely seen as a demonstration of the City's determination to regulate the voluntary self-regulation of the financial system in a controversial matter.

Sir Hugh, who is seeking two new non-executive directors for the SUITS Board, said yesterday that people had been approached during the day to see if they would take on these offices.

## Allende man killed in U.S. bomb attack

BY JUREK MARTIN, U.S. EDITOR WASHINGTON, Sept. 21

SENOR ORLANDO LETELIER, a former close associate of the Chilean President Allende of Chile, was assassinated here this morning when the car in which he was riding was blown up by a bomb. One of his travelling companions was killed and another injured.

Sr. Letelier had served as Foreign Minister in 1973 under President Allende and before that as Chilean Ambassador to Washington.

He was arrested after the coup three years ago and detained under duress for some time before being released, following the intervention on his behalf of the Venezuelan Government.

Of late he has been one of the most vocal critics of General Pinochet's junta, living abroad, to the extent that earlier this month he was stripped of his Chilean nationality.

In Washington he had been a leading lobbyist arguing against U.S. military aid to Chile and enjoyed a number of close contacts on Capitol Hill.

He taught at American University here and served as director of the Transnational Institute of Policy Studies.

Sr. Letelier's associates immediately charged that his murder was the work of agents of Dina, the Chilean secret police.

The assassination was compared with that of General Carlos

Prats, the Chilean military commander, who was killed in an assassination in 1974 (also by a car bomb) and the attempt on the life of Bernardo Leighton, the former Christian Democratic vice-president in Rome last year.

The State Department said that it was gravely concerned at Sr. Letelier's death, and not simply because his car was blown up while moving along Massachusetts Avenue, generally known as "Embassy row" here.

There is likely to be a hue and cry on Capitol Hill over the assassination. The Administration has so far this year quelled all Congressional attempts to interfere with its policy of commercial aid, in some instances, military aid to Chile but a once quiescent opposition is now likely to become more vocal.

Chilean exile sources in New York are said to be becoming increasingly nervous that action might be taken against them. It has been suggested that an organisation to conduct acts of terror against leading anti-junta officials had already been formed in the U.S.

The assassination of General Prats in Buenos Aires is considered to have been the work of the Argentine anti-Marxist Alliance, which was closely connected with Sr. Lopez Rega, who was known to be sympathetic to the Pinochet regime.

### Weather

**U.K. TO-DAY**  
CLOUDY, with some rain.  
London, E. S.E. Cent. S. England, E. Midlands  
Mainly dry. Max. 18C (64F).  
N.W., N.E. Cent. N. England, W. Midlands, Borders, Edinburgh, Dundee, S.W. Scotland, Glasgow

### BUSINESS CENTRES

	Y'day	Mid-day	Y'day	Mid-day
Amsterdam	S 22-23	M 23-24	London	S 22-23
Bombay	S 22-23	M 23-24	Madrid	S 22-23
Buenos Aires	S 22-23	M 23-24	Manila	S 22-23
Cairo	S 22-23	M 23-24	Melbourne	S 22-23
Calcutta	S 22-23	M 23-24	Moscow	S 22-23
Colon	S 22-23	M 23-24	Munich	S 22-23
Hankow	S 22-23	M 23-24	New York	S 22-23
Harbin	S 22-23	M 23-24	Osaka	S 22-23
Hong Kong	S 22-23	M 23-24	Paris	S 22-23
Kobe	S 22-23	M 23-24	Perth	S 22-23
London	S 22-23	M 23-24	Prague	S 22-23
Lyons	S 22-23	M 23-24	Rangoon	S 22-23
Manila	S 22-23	M 23-24	Rio de Janeiro	S 22-23
Medan	S 22-23	M 23-24	Rome	S 22-23
Montevideo	S 22-23	M 23-24	Sao Paulo	S 22-23
Mumbai	S 22-23	M 23-24	Seoul	S 22-23
Nairobi	S 22-23	M 23-24	Singapore	S 22-23
Osaka	S 22-23	M 23-24	Sydney	S 22-23
Paris	S 22-23	M 23-24	Taipei	S 22-23
Perth	S 22-23	M 23-24	Tokyo	S 22-23
Prague	S 22-23	M 23-24	Yokohama	S 22-23
Rangoon	S 22-23	M 23-24		
Rio de Janeiro	S 22-23	M 23-24		
Rome	S 22-23	M 23-24		
Sao Paulo	S 22-23	M 23-24		
Seoul	S 22-23	M 23-24		
Singapore	S 22-23	M 23-24		
Sydney	S 22-23	M 23-24		
Taipei	S 22-23	M 23-24		
Tokyo	S 22-23	M 23-24		
Yokohama	S 22-23	M 23-24		

## U.K. wins £34m. machine order from Poland

BY KENNETH GOODING, INDUSTRIAL CORRESPONDENT

POLAND HAS placed orders for £34m. of U.K. machinery in connection with the expansion of its automotive and tractor industries.

Letters of intent have been signed with three U.K. companies covering machine tools worth more than £20m. and, according to Messrs. Ferguson Perkins, which has to contract to reconstruct the Polish tractor industry, this should be followed by a flood of orders to Britain during the next three months. This could make difficulties for British Leyland's car division when, eventually, it begins to order the machine tools it requires.

British manufacturers expect to receive machine tool orders worth £100m. from the tractor project.

An announcement is also being made to-day by Guest Keen and Nettlefolds that it is to build a £14m. bearing plant for Poland to increase the capacity for diesel engine and automotive bearings there.

Delivery of equipment should start in a year's time with the

plant coming on stream early in 1979.

The Polish orders are a much-needed boost for the U.K. machine-tool industry, whose orders on hand have shrunk to near an all-time low in real terms this year. The news comes on the opening day of the exhibition, MACH 76, at the National Exhibition Centre in Birmingham.

The Poles have signed letters of intent with Matrix Churchill, part of the Tube Investments group, for the supply of special machines, and with Cross International (U.K.) and Kearney and Trecker Marwin for transport machinery. KTM has just been taken out of State control and is now part of the Vickers engineering group.

Some 5,000 machine tools covering a wide range will be installed in a five-building complex at the Ursus tractor plant near Warsaw.

As the first orders show, the deals seem more likely than ever to produce the kind of embarrassing situation over British Leyland which the U.K. machine

tool industry hoped to avoid. The Poles are requiring just the type of equipment Leyland's car division will need.

Total U.K. exports of machine tools last year were £180m. and annual capacity for special purpose machine tools at about £80m., or less than one third of total U.K. manufacturing capacity.

Manufacturers preparing for the exhibition here believe that the first car division orders will be placed next month. This might well be too late, because the U.K. industry has had to look particularly to the Comecon and OPEC countries for orders during the recession.

"Companies have been involved in a great deal of expense in production engineering, executive time and so on in connection with programmes about to start in Yugoslavia and Romania as well as from Poland, and they will be very reluctant to throw away that investment to cope with Leyland's requirements," said one major manufacturer.

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## Scunthorpe trouble cuts BSC output

BY IAN HARGREAVES, LABOUR STAFF

THE BRITISH Steel Corporation's iron-making problems, severely heightened by the halting of Llanwern's major blast furnace earlier this month, have been made worse by a fall in iron output at its largest and most modern steel works at Scunthorpe.

Scunthorpe's problems chiefly result from two of its 10 blast furnaces being out of service for relining. There are also constant technical difficulties associated with the use of domestic iron ore which at Scunthorpe, is mixed with imported ore.

The result has been a shortfall in steel production at Scunthorpe of 100,000 tonnes since April, a major contribution to the total BSC deficit of 250,000 tonnes. This figure, calculated at the end of last month, will have been made worse by the breakdown at Llanwern.

This combined shortage makes it increasingly unlikely that BSC will break even this year after its £255m. loss last year. Its overall target for the year is £22.8m. tonnes and any substantial deficit will rule out a break-even result.

Even with maximum iron output from its furnaces Scunthorpe would be falling 1m. tonnes a year short of its 6m. tonnes steelmaking capacity.

The only long-term answer is to build a large Llanwern-style furnace. Scunthorpe will be pressing for the inclusion of such a scheme in BSC's rolling five-year plan next year.

A bright spot, though, is the formal opening to-day of a 35m. No. 2 rod mill at Scunthorpe. This mill, with the existing No. 1 mill, will give the plant a combined annual capacity of 1.1m. tonnes of steel rod, replacing some of the most outdated rod technology in S.E. List Fm.

Particularly pleased arrangements for the new mill, whose

annual 600,000-tonne output will be achieved with only 310 employees.

Scunthorpe now boasts that at 300 tonnes of liquid steel per man-year its productivity matches the best in Europe. The figure is significantly higher than the BSC average.

Most of the men employed at the new rod mill are working at BSC's Normandy Park mill which closed over a year ago. That plant had "all the usual overmanning problems of an old style works," says the Corporation.

The fact that the men had so readily adapted to reduced manning levels throughout the course of redevelopment at Scunthorpe was the key to the division's profitability record, it added.

The main design features of the mill are its rolling capacity of 200 feet per second, its "no twist" rolling blocks, a cooling system which cuts scale formation and the flexibility of product gauge available (up to 4,000 lbs in a five range from 5.5 mm to 13 mm). Four computers control the operation.

The corporation hopes to increase its export penetration in Europe and the U.S. as a result of the commissioning of the rod mill, although overcapacity in the European market presents problems.

Of special concern is the fact that the corporation is unlikely to be able to implement the 10 per cent "price increases" announced for October for more than a fifth of its wire rod products because of lack of buoyancy in the market. It hopes that the price increases will be acceptable by the end of the year.

To follow the opening of the rod mill, BSC plans to invest a further £76m. at Scunthorpe in steel billet production over the next three years. The plant's total contribution to BSC's £22.8m. tonnes target this year will be 4.5m. tonnes of steel.

Continued from Page 1

### Workless

by the British Leyland dispute and the end of holidays.

Against this, the level of unemployment has also been affected by special measures which some observers have suggested may have reduced the peak at the expense of lengthening the recovery period.

The new move to offer "work experience" to unemployed teenagers, will not affect the figures. Other measures have had a significant impact.

The temporary employment subsidy, for example, has already covered nearly 114,000 jobs and it is thought that with three more months to go the total could reach 180,000 against the original estimate of 120,000. Under job creation schemes, projects have been started providing over 39,000 jobs, with further projects approved, providing over 41,000 jobs.

Philip Rawstone writes: Mr. James Callaghan is to lead a determined effort to quell Left-wing opposition to the Government's economic policies, sharpened by yesterday's unemployment figures, before the Labour Party conference opens next week.

The Prime Minister has given top priority to blocking a move by leading Left-wingers at Friday's pre-conference meeting of the party's National Executive Committee to force a conference vote on a motion attacking the Government's expenditure cuts.

Mr. Callaghan, who called a number of senior Ministers, including Mr. Denis Healey, the Chancellor, and Mr. Albert Booth, Employment Secretary, to Downing Street yesterday, to review the situation, will attend the meeting in Blackpool in spite of Dr. Henry Kissinger's visit to London that day to discuss Rhodesia developments.

Contingency plans are being made for the Prime Minister to return to London afterwards to meet the U.S. Secretary of State, who will be having talks with Mr. Anthony Crosland, the Foreign Secretary.

THE LEX COLUMN

## Tate takes the initiative

Tate and Lyle has played its last important card in the takeover battle for Manbre & Garton, and it looks a powerful one. Yesterday morning its brokers were sounding out possible institutional response to a higher bid and in the afternoon, when Tate decided to move up by 30p per share to 200p in cash, they had no trouble in picking up 27½ per cent of the equity to add to the 4 per cent of acceptances to the original offer. The fact that such a proportion of the major shareholders were prepared to commit themselves at this stage suggests that the time for talking may be over.

Before the higher bid emerged yesterday a statement from Manbre promised that a forecast for the year to October 1977 would be published next week and would show a material improvement in dividends and profits. Even on historic figures the p/e is no more than 10.9 and the yield 7.7 per cent, but Manbre will have to come up with something exceptional to regain the initiative. The bid still looks attractive from Tate's point of view offering £47.5m. cash for over £10m. of pre-tax profits.

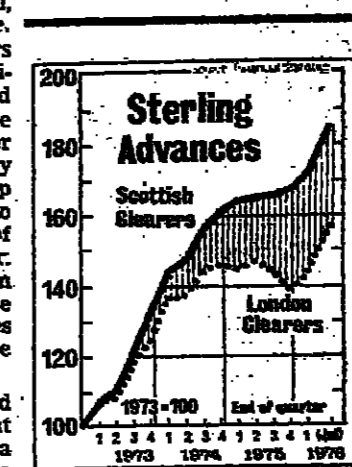
Last night's other major bid story—the offer by APV for Hall-Thermotank—is a much more tranquil affair since it has been irrevocably accepted by 53 per cent of the equity. The deal appears to make financial sense—£11.3m. of shares and convertible for a group with profits of over £3m. net worth of more than £12m. and substantial overseas sales. There seems to be some commercial rationale too, and APV's takeover record is a sound one.

**Bank of Scotland**

Bank of Scotland's performance continues to be dogged by the need for extra pension provisions — a hangover from the 1969 takeover. As it is, a rise of 12 per cent in interim pre-tax profits to £11.2m. over the second-half of last year, reflects almost entirely the absence of bad debt provisions.

By comparison with the second-half of 1975-76, the first six months of this year saw a virtual standstill in growth. Average base rate slipped by 0.5 per cent to around 10 per cent, and staff costs rose 10 per cent. Last year's buoyant trend in customer deposits has continued but bank advances con-

Index rose 6.1 to 345.8



tinued sluggish. The only bright spot is on the international side where Scottish banks' foreign currency lending has risen by over one-third since the start of the year. Of the two major subsidiaries, which contribute roughly a third of profits, Northwest Securities has continued to recover while Bank of Scotland Finance — the merchant bank — has marked time. Pre-tax profits of £25m. for the year, look possible, but the message from these figures is that Scottish banks are no longer outperforming their London rivals.

**Financing industry**

"Are you thinking of industrial investment in Great Britain?" read the headline of an advertisement placed in Monday's Wall Street Journal by the National Coal Board Superannuation Scheme and the Mineworkers' Pension Fund.

The text goes on to offer long- and medium-term finance for companies wishing to expand, re-equip, or set up manufacturing units in the U.K.

This is an extension of an idea which the NCB funds have been offering U.K. borrowers for some time; so far without too much success: advances of around £10m. are currently under negotiation. However, the funds seem ready to make a substantial commitment — up to £50m. is suggested — and to be very flexible in the kind of finance they might offer. They suggest, for instance, that a package might be made up of a sale and leaseback arrangement on land and build-

ings, coupled with finance up to 12 years for plant and equipment. They will consider fixed or floating rate terms, may be willing to roll up repayments — and even interest — during the early years. The idea seems to be to charge relatively low rates through the of the loan, and make the shortfall by some form of participation — in future rather than earnings.

That will make borrowers think a little, during a period of inflation and price controls, but the idea seems to be a deal more imaginative than paintings.

Still on the subject of financing industry, one cannot let NEB's interim "profits" go without comment.

The figures depend almost entirely on the consolidation of British Leyland, and are misleading: what is needed is source and use of funds.

### BICC

BICC's first-half profits ahead of most market expectations, but the tax charge rising sharply and for 1976-77 share price are not going to make much headway. In at 104½-up 6½p yesterday, prospective p/e on average capital is around 10, which built on hopes for an optimum world-wide demand for cars during 1977. This year average volume has been static at £20.5m. pre-tax coming from recovery in construction from the international exchange profits. Higher prices will start to feed in working capital levels in current half, and the losses Portugal need to be cleared. The 1976 yield is around 10 cent, and likely to be covered.

**Eagle Star**

Eagle Star's underperformance is mildly disappointing, with losses of £1.5m. to £4.8m. in the year even though the direct of January's storms was charged to the previous year's profit. But Greenwood Securities going well, and an overall profits rise of about a quarter still looks feasible for the leaving a prospective p/e about 7½ at 105p.

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